DOCUMENT RESUME

ED 034 327 EC 004 261

AUTHOR	Siller, Jerome; And Others
TITLE	Studies in Reaction to Disability. XII: Structure of Attitudes toward the Physically Disabled; Disability Factor Scales--Amputation, Blindness, Cosmetic Conditions.
INSTITUTION	New York Univ., N.Y. School of Education.
SPONS AGENCY	Department of Health, Education, and Welfare, Washington, D.C. Social and Rehabilitation Service.
PUB DATE	Nov 67
NOTE	109p.
EDRS PRICE	EDRS Price MF-$0.50 HC-$5.55
DESCRIPTORS	Amputees, *Attitudes, Attitude Tests, Blind, Demography, *Exceptional Child Research, Factor Analysis, Internal Scaling, Item Analysis, Negative Attitudes, *Physically Handicapped, Stereotypes, Test Construction

ABSTRACT

To describe and to develop instruments to measure attitudes toward amputees, the blind, and those with cosmetic conditions, three groups of subjects responded to one of three large pools of items tapping attitudes toward the three disability conditions. Three new groups of about 500 subjects of diverse demographic characteristics were given one of three revised and reduced questionnaires. The returns were factor analyzed and scales were derived from the resulting factors. The seven virtually identical factors which emerged from the amputation and blindness analysis were interaction strain, rejection of intimacy, generalized rejection, authoritarian virtuousness, inferred emotional consequences, distressed identification, and imputed functional limitations. The cosmetic conditions item set contained two factors which were identical (interaction strain, rejection of intimacy); two which were analogous (reluctant aversion and superficial empathy); and two unique dimensions (qualified aversion and proximate offensiveness). A review of related research, and data on each item of the scales are included. (LE)

STUDIES IN REACTIONS TO DISABILITY

ED034327

XII: STRUCTURE OF ATTITUDES TOWARD THE PHYSICALLY DISABLED

Disability Factor Scales– Amputation, Blindness, Cosmetic Conditions

JEROME SILLER
DONALD H. VANN
LINDA T. FERGUSON
BERT HOLLAND

EC004261E

NEW YORK UNIVERSITY
SCHOOL OF EDUCATION
NOVEMBER 1967

ED034327

STUDIES IN REACTIONS TO DISABILITY

XII: STRUCTURE OF ATTITUDES TOWARD THE PHYSICALLY DISABLED

Disability Factor Scales–
Amputation, Blindness, Cosmetic Conditions

JEROME SILLER
LINDA FERGUSON
DONALD H. VANN
BERT HOLLAND

NEW YORK UNIVERSITY
SCHOOL OF EDUCATION
WASHINGTON SQUARE
NEW YORK, NEW YORK 10003

NOVEMBER 1967

ACKNOWLEDGEMENTS

Dr. Jacob Cohen was statistical consultant. We are indebted to both Dr. Cohen and Dr. Philip R. Merrifield for their helpful comments on the manuscripts and to Mrs. Patricia Shelton for the invaluable assistance she provided throughout the project.

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

This investigation was supported, in part, by Research Grant No. RD-1276-P from the Division of Research and Demonstration Grants, Social and Rehabilitation Service, Department of Health, Education, and Welfare, Washington, D.C., 20201.

Supplementary assistance was provided by the Association for the Aid of Crippled Children, New York, N.Y.

TABLE OF CONTENTS

Page

Chapter 1 – INTRODUCTION 1
Measures of Attitudes toward the Physically Disabled 2

Chapter 2 – DEVELOPMENT OF THE DISABILITY FACTOR SCALES . . 5
Rationale 5
Preliminary Stage 6
Final Developmental Stage 9

Chapter 3 – DIMENSIONS OF ATTITUDES 17
Amputation 17
Blindness 21
Cosmetic Conditions 23

Chapter 4 – THE DISABILITY FACTOR SCALES 27
Establishment of Factor Scores 27
Administration and Scoring 28
Psychometric Characteristics of the Disability Factor Scales 30

Chapter 5 – RELATIONSHIPS AMONG SCALES 39
Interrelationships of Scales within Questionnaires 39
Interrelationships of Scales across Questionnaires 42
Relationships among Identically Labelled Scales 42
Quasi-Second-Order Relationships among Scales 45

Chapter 6 – RELATIONSHIP OF SCALE SCORES TO DEMOGRAPHIC VARIABLES 52
Demographic Variables as Predictors of Scale Scores 53

Chapter 7 – THEORETICAL IMPLICATIONS 57
The Nature of Components of Attitudes toward Specific Disabilities 57
The Generality of Attitudinal Components across Disabilities 58
The Relationships among Attitudinal Components 58
The Consistency of Attitudes of Individuals within and across Disability Types 59
The Role of Demographic Variables in Determining Reactions to Disabled Persons 60

Chapter 8 – SUMMARY AND IMPLICATIONS 62
Summary 62
Findings 63
Implications 67

References 71

Appendix A – FACTOR LOADING, MEAN, AND STANDARD DEVIATION OF EACH ITEM OF THE DISABILITY FACTOR SCALES ARRANGED BY SCALE 74

Appendix B – MEANS AND STANDARD DEVIATIONS OF SCALE SCORES OF SUBGROUPS 89

Appendix C – ORDERED FACTOR ANALYSIS OF AMPUTATION, BLINDNESS, AND COSMETIC CONDITIONS ITEMS 90

Chapter 1

INTRODUCTION

The purpose of this report is to describe salient dimensions of attitudes toward the physically disabled (as exemplified by amputees, the blind, and those with cosmetic conditions) from the vantage point of the nondisabled.[1] The term "attitude" is used in this monograph in its most general sense, encompassing expressions of cognitive, conative and affective tendencies. Our primary concern is with the substantive issues involved in reactions toward the physically disabled rather than with attitude theory *per se*. As an integral part of this work a set of scales (The Disability Factor Scales or DFS), which have the requisite reliability and sensitivity to permit accurate and precise measurement of experimental effects, was developed to measure these dimensions. The DFS presently consists of the DFS-A (amputation), the DFS-B (blindness), and the DFS-C (cosmetic conditions). A full description of their development and their psychometric properties is given below.

The major theoretical issues of the dimensionality of this attitude domain and the consistency of attitudes across disabilities were studied. More particularly, the issues of interest were: (1) the nature of components of attitudes toward specific disabilities; (2) the generality of attitudinal components across disabilities; (3) the relationships among attitudinal components; (4) the consistency of attitudes of individuals across disabilities; and (5) the role of demographic variables in reactions to the disabled.

This report begins with a review of the most pertinent work in the area, and then presents the rationale and the procedures involved in developing the Disability Factor Scales. The specific factors or dimensions of attitudes are described. Next, the relationships among the scales, and between the scales and certain demographic variables are examined, following which the theoretical issues mentioned above are considered. Finally there are a summary of the report, a statement of recommendations for the use of the DFS, and a discussion of some of the implications of the present results for the field of rehabilitation.

---

[1] Although development to date has concerned the measurement of the nondisabled's attitudes toward these groups, the scales can readily be adapted to the measurement of attitudes of people with disabilities toward themselves and other handicapped persons.

MEASURES OF ATTITUDES TOWARD THE PHYSICALLY DISABLED

The development of the DFS represents an attempt to add conceptual clarification to, and improve scaling in, this area. Common failings of earlier instruments include insufficient validation and standardization, low reliability, overspecificity (most deal with blindess), inadequate sensitivity, and the assumption of unidimensionality of underlying attitudes.

Previous Scales

With few exceptions, e.g., Cowen, Underberg, and Verillo (1958), Yuker, Block, and Younng (1966), and Whiteman and Lukoff (1963, 1964a, 1964b, 1965), measures of attitudes toward the disabled have had relatively trivial psychometric development, and reports of their employment by other than their own developers have been rare, if not nonexistent. Ordinarily, where studies of attitudes toward the disabled are reported, makeshift instruments used only for that particular investigation have been the rule.

Blindness, of all disability types, has received the bulk of attention. Cowen et al. (1958) provide a good example of a disability-specific scale. Using items from earlier scales by Steingisser (1954) and Fitting (1954), they developed a 30-item Attitude to Blindness Scale for which a single total score is obtained.

The most widely employed instrument in the area of disability is the Attitude Toward Disabled Persons Scale (ATDP) developed by Yuker and his associates around 1959, with fuller information reported in a 1966 publication. The original ATDP is a 20-item, Likert-type scale for which a total summated score is obtained. Items refer to "disability" in its generalized sense, e.g., "disabled children." Considerable data on the psychometric properties of the ATDP, its factorial structure for various populations, and its correlates among numerous personological, demographic, and response set indices have been reported by various researchers (e.g., Arnholter, 1962; Bell, 1962; Chesler, 1965; Genskow & Maglione, 1965; Siller, 1963b, 1965, 1966b; Siller & Chipman, 1963, 1964b; Siller, Chipman, Ferguson, and Vann, 1967). Two new forms of the ATDP, expanding the number of items in each to 30, recently have been developed by Yuker, et al. (1966) but most of the obtained data is on the earlier form. The improvement in reliability over that of the original 20-item form has not been substantial, and the value of the new scales as alternate forms is limited by their median intercorrelation of .67.

In an assessment of this area, Siller (1966b) observed that no correlation between personality variables and disability attitude measures greater than .60 (Jabin, 1965) has been reported. In fact, reported correlations are mostly trivial, if not actually zero. Siller and his associates, using the ATDP, two experimental scales of their own, and various nondisability measures, invariably found the disability material clustering apart from the other material. In effect, a *strong* relationship between a measure of disability attitude and one or more nondisability indices is yet to be demonstrated.

The question arises as to whether the low degree of association between disability attitude and other variables is due to the absence of such relationships or to the insensitivity of the measures. Siller (1966b), pursuing the latter possibility as the more likely, suggests that methodological problems of measuring disability attitudes are related to two theoretical issues. The first methodological difficulty is that the general term "disability," when employed in an instrument, raises too many referents for the respondent; e.g., is amputation or blindness or a cardiac condition being referred to? This procedural problem reflects the theoretical issue of the extent to which the public's reactions are general across disabilities and the extent to which they are specific to a particular disability. The second theoretical issue pertains to the dimensionality of attitude structure in this domain. Both the Attitude to Blindness Scale and the ATDP, by employing only a single summative score, treat this domain of attitudes as one-dimensional. The work of Whiteman and Lukoff (1963, 1964a, 1964b, 1965), Siller (1963a, 1963b), Siller and Chipman (1964a, 1964b), Siller, Chipman, Ferguson, and Vann (1967) supports the contention of multidimensionality. Siller et al., (1967) through interviews identified a number of specific aspects of attitude that influence reaction to the handicapped.

Two series of studies using the factor-analytic model have particular relevance to the question of dimensionality of attitudes and to the DFS. Cohen and Struening (1962) have reported on the development of the Opinions about Mental Illness Scale (OMI). Utilizing large numbers of personnel in various mental hospitals, Cohen and Struening developed the OMI, an instrument of 51 items which measures five dimensions of attitude toward mental illness. The item format is that of a sentence stating something about mental illness (e.g., "Most patients in mental hospitals don't care how they look"). The respondent replies to these statements along a six-point continuum ranging from "strongly agree" to "strongly disagree." The dimensions of the OMI are called Authoritarianism, Benevolence, Mental Hygiene Ideology, Social Restrictiveness, and Interpersonal Etiology. As these authors indicate, "... the fact that items can be organized on a single dimension does not mean that they are best so organized." The present study in many respects used the Cohen and Struening work as a methodological model.

Most directly relevant to the content of the DFS is the work of Whiteman and Lukoff (1963, 1964a, 1964b, 1965). These authors have applied a components approach to the study of attitudes toward blindness. The basic methodology was to administer several questionnaires dealing with blindness to 58 college students and to 65 social-work students. In the development of each questionnaire a number of dimensions are postulated, and the items were specifically constructed to tap these dimensions. Item format was diversified in an attempt to minimize response set and to lend support to clusters or factors cutting across indices referring to common content but differing in mode of presentation. The questionnaire taken by the social-work students had to be abridged due to limitations in time available for administration. The data of each sample were treated separately. Intercorrelations among indices were factor-analyzed and rotated orthogonally.

> For the more extended questionnaire, five factors were identified. These are concerned (a) with the degree to which the respondents have a negative view of the emotional life and general adequacy of blind people, (b) with the degree to which the respondents see blind people as socially competent, (c) with the degree to which blindness is perceived as potentially threatening or uniquely frustrating, (d) with tendencies to be protective of blind people, and finally (e) with the readiness for personal interaction with blind people. (Whiteman & Lukoff, 1964b, p. 352).

Four of these factors were found in the group receiving the abridged questionnaire.

Whiteman and Lukoff have provided valuable initial structuring of disability attitude dimensions and have suggested a number of potentially useful instruments of measurement. However, at present, the variety and complexity of the tasks to which the subject must respond, and the level of vocabulary employed, severely limit the practical utility of their indices. Due to the restricted number of subjects and the highly specialized nature of these persons, generalization of results cannot be made readily. Subsequent use of their instruments with a housing sample and with high school students (Whiteman & Lukoff, 1963) showed both the value and limitations of their material as basic measuring devices.

Chapter 2

DEVELOPMENT OF THE DISABILITY FACTOR SCALES

Rationale

Factor-analytic techniques of scale construction represent a logical choice of method for the researcher who suspects that an attitude domain is multidimensional. This procedure provides a direct answer to the question of dimensionality of attitude structure in a given area, and the nature of the component attitudes is suggested by interpretation of the resulting factors. Furthermore, factor analysis yields highly reliable scales with a minimum number of items. These advantages are offset, in the view of some, by such problems as the large number of subjects required to achieve stable structure, the statistical technicalities of the method, and the subjectivity of interpretation of the resulting factorial dimensions. However, since it was believed that we could satisfactorily deal with these problems, factor analysis was our method of choice.

The question of the consistency of attitudes across disabilities generates a more specific problem with regard to the actual construction of items for such scales, viz., whether to word them in terms of "disability" as a general class (as does the ATDP) or in terms of specific sorts of disability, such as "blindness." Practical experience with instruments worded in terms of "disability" revealed that subjects perceive it as an ambiguous referent, the vagueness of which arouses antagonism and frustration. Additionally, subjects visualize different disabilities, thereby inevitably increasing the measurement error variance for such items. Consequently, the strategy became one of developing selected disability-specific scales which would serve to plot the structure of attitudes within and across disabilities.[2]

To obtain a strategic variety among the disability-specific scales, the disability universe was sampled by selecting three types representing key positions on two pertinent continua: functional and cosmetic impairment. Items within each questionnaire were written to refer to one specific disability. The types selected were amputation (middle range on both cosmetic and functional impairment); blindness (highly functional, low cosmetic impairment); and cosmetic conditions (low functional, high cosmetic impairment). Siller (1963a) and Siller et al. (1967) have obtained considerable data identifying amputation as being in a number of respects midway along these dimensions, while blindness is reacted to overwhelmingly as a functional condition.

---

[2] Scales that would provide valid measures of attitudes toward disability in general would, of course, be of great overall utility. Data obtained in the present study indicate that it would be feasible to establish a General Form of the DFS. The one questionnaire would contain items referring to different conditions, thus measuring dimensions of attitudes toward disability in general, but based on reactions to specific conditions, rather than to the vague referent "disability."

The specific design of the DFS was determined by the desirability of having instruments that were inclusive, economic, and convenient for experimental purposes. After a number of alternatives were considered, a self-report, objectively-scored format, using a vocabulary that is comprehensible from the adolescent age level on, was chosen.

PRELIMINARY STAGE

In order to identify salient dimensions of this attitude domain, a comprehensive schema of dimensions of potential relevance was developed (Siller, 1965b). Four broad categories of reactions were conceptualized: assumed attributes of individuals with a particular disability; personal reactions of the respondent to such disabled individuals; normative assumptions about reactions of other non-disabled individuals (e.g., most people are repelled by the blind); and policy orientations (e.g., advocacy of special treatment for the disabled). Within this general framework, a large number of specific dimensions were suggested by the senior author's clinical and research experience in this area and by extensive review of relevant literature in the fields of psychology and sociology.[3] The aim was to make the variety of dimensions as exhaustive as possible at this initial stage, so that a wide range of potentially significant variables would be given adequate representation. Reduction of the number of dimensions then would be the result of *a posteriori* empirical procedures rather than *a priori* neglect.

Construction of the Initial Item Pool

A large pool of Likert-type items, with six choices, were written to tap each of the dimensions. "Control" features were built into the items so that such aspects as severity and type of disability were an essential part of the item, as were such factors as age and sex of the disabled. Items pertaining to authoritarianism and perception of one's own health were included in the amputation and blindness questionnaires in order to tap dimensions occasionally considered in the literature (Cowen et al., 1958; Jabin, 1965). Since it was recognized that most disabilities involve cosmetic implications of varying degrees, a special inquiry into this area seemed worthwhile. Consequently, an independent measure of aesthetic sensitivity and aversion was designed so that added insight into the cosmetic aspects of disability might be gained. This scale was administered as a separate section of the questionnaire on cosmetic conditions. The initial composition of the three questionnaires was as follows:

---

[3] Kenneth J. Weingarten made a significant contribution to this phase of the work.

Amputation – 212 items consisting of 173 amputation-specific, 9 personal health, 18 authoritarianism, and 12 other items. The ATDP and Siller's Feeling Check List (FCL) and Social Distance Scale of Disability (SDS) were administered as additional units in the questionnaire. A separate pretest of responses to open-ended questions (Siller 1965b) indicated that most respondents, rather than having highly individualistic conceptions, share a general "image" of an amputee as male, without any corrective device, and with a "limb" or even "limbs" missing. In another pretest,[4] the stimulus "arm amputee" was used in a series of questions answered by a group of persons who also rated similar "leg" items. No difference in negativity was elicited. Furthermore, subjects also stated that they did not respond differentially to various types of amputation. Thus, it seemed unnecessary, in general, to structure items in terms of site and extent of amputation or use of a prosthetic device. The term amputee apparently elicits (among subjects) a sufficiently clear, and sufficiently comparable, image to be used as the core stimulus in most instances.

Blindness – 212 items consisting of 173 blindness-specific, 9 personal health, 18 authoritarianism, and 12 other items. The ATDP, FCL, and SDS were also included. With the exception of substituting blindness for amputation, rewording items for appropriate phrasing, and adding some items specifically pertinent to blindness, the amputation and blindness questionnaires were constructed to be as identical as possible. The objective of this procedure was to reduce the influence of instrument factors when making across-questionnaire comparisons, recognizing that correlations may be inflated as a consequence.

Cosmetic Conditions – 71 items were distributed among such conditions as acne, scars, obesity, ugliness, body odor, cross-eyedness, bad breath, twitches, and buck teeth. A few other items covered heart condition, blindness, deafness, and amputation so that some functional aspects could be included as possible orienting variables. Fifty additional items from our experimental scale of Aesthetic Sensitivity and Aversion were included as a block in the questionnaire. A major reason for the much smaller number of items in the cosmetic condition set, as compared to amputation and blindness, was the limited number of applicable dimensions. Wording of items could follow that of the other questionnaires only to a limited extent.

---

[4] The pretest involved comparisons of subjects' ratings of two versions of the same questionnaire. In one version, the referent was "amputee," while the second version differed in that the amputation was specified (e.g., a person missing an arm or leg). Internal analysis of the specific version demonstrated that there were no significant differences between responses to "arms" versus "legs."

All questionnaires contained demographic questions on age, education, sex, race, marital status and religious background. Information on degree of contact with amputees or the blind was obtained on the relevant questionnaires.

First Reduction by Factor Analysis

Amputation – The set of items, written to tap the *a priori* dimensions and the other kinds of material, was administered to 87 college undergraduates. The resulting matrix of item intercorrelations was then factor-analyzed and rotated to an orthogonal structure. Inspection of several varimax rotations revealed that the original dimensions could be reduced to about ten meaningful factors. (Interestingly enough, despite the inherent instability of the factor structure due to the large number of items and small number of subjects, subsequent analyses on larger populations and reduced item sets indicated that even this primitive level of analysis resulted in meaningful findings.)

The effects of the personal health, authoritarian and other nondisability type items, as well as the ATDP, FCL, and SDS were assessed. In brief, the nondisability material, with but a few exceptions, did not correlate sufficiently with diability items to warrant inclusion in the next form of the questionnaire. The ATDP, FCL, and SDS did have primary loadings with the disability items, but not to the extent that their further use was justified. The factor loadings also provided a basis for eliminating ambiguous or non-discriminating items. A number of new and rewritten items were included for the purpose of adding support to those factors which needed reinforcement. On these empirical bases, the item set was reduced from 212 to 145.

Data also were available regarding the effect of the controls written into the items. It was apparent that the elaborate precautions taken to vary age, sex, etc., of the persons referred to in the items were unnecessary. That is, no factor could be interpreted as a "child" or "woman" or "social status" complex. The principle of grouping seemed based on psychological rather than sociological grounds.

Analysis of the relationship of demographic variables to individual items (t-tests) revealed that contact with the disabled and sex of the respondent yielded a number of statistically significant differences. In general, women and those who had extended contact with the disabled appeared more favorable. These items were retained for the next pretest.

Blindness – Administrative and interpretive handling of the blindness material directly paralleled amputation procedure. Data on 91 Hunter College students were collected, factor-analyzed, and orthogonally rotated. Several varimax rotations were inspected, and item reduction was conducted employing information from seven and eight factor solutions. The item set was reduced to 145 (including revised and new items). To a considerable extent, the observations made in regard to the amputation questionnaire apply here as well. The specific differences are of minor import compared to the similarities.

Cosmetic Conditions – The 71 items on cosmetic conditions were placed in a questionnaire following 50 items on Aesthetic Sensitivity and Aversion. This material was administered to varied undergraduate groups (N = 111). When the entire questionnaire was factor-analyzed, it was found that the items dealing with cosmetic conditions loaded apart from those dealing with aesthetic issues, with almost no overlap. A report of the analysis of the nondisability questions will be made elsewhere. The 71 cosmetic condition items were then refactored exclusive of the aesthetic items. A six-factor varimax rotational solution provided the guidelines for dropping and adding items so that the dimensional structure of the instrument would be further clarified. A set of 84 items resulted.

FINAL DEVELOPMENTAL STAGE

The new questionnaires consisted of the 145 item sets on amputation and blindness, and 84 items on cosmetic impairments. Our goals in administering these new questionnaires were to improve on the clarity and stability of the previously obtained factorial structure, to reduce further the size of the instruments, and to provide a definitive basis for the selection of items for the final scales which would comprise the DFS.

Final Developmental Samples –
(Amputation, N = 483; Blindness, N = 477; Cosmetic Conditions, N = 520)

The revised questionnaires were presented to new and larger groups of subjects. The major objective in recruiting subjects was to obtain populations large and varied enough to yield valid and fruitful statistical findings. With the thought that demographic diversity might increase the heterogeneity of attitudes toward disability, an effort was made to obtain subjects of diverse ages, socio-economic and education levels, and racial and religious origins. It was possible to identify within the subject pool certain subgroups large enough to allow the calculation of separate reliable descriptive statistics. Despite the relatively large number of subjects, the findings cannot be considered representative of the population at large. Generalizations to other populations, and the establishment of norms, must await more systematic sampling based on principles of randomization and stratification.

Most of those who participated in this stage of the project were residents of the New York metropolitan area; 93 were students of physical therapy at the University of Maryland. Administration for high school and college students generally occurred in a group setting (i.e., a classroom), whereas other respondents usually answered the questionnaires individually. In all, there were 1,014 different respondents to the three questionnaires, and 233 of these (the Repeat Group) answered all three, so that a total of 1,480 completed questionnaires were collected.

Tables 1 and 2 contain descriptive data on the sex, age, and education of respondents to each questionnaire. The ages of the respondents ranged from 14 to over 50 with the mean and standard deviation on each questionnaire falling around 25 years and 11 years respectively. Educational level, measured in terms of the number of completed years of schooling, varied from less than 6 to 17 (the latter indicating at least some attendance at graduate school) and the means and standard deviations for the three groups are equal to about 12.5 and 2.0 years respectively. There was an over-all preponderance of females over males (with ratios of about 3 to 2) in each of the three groups. In addition, each person who answered the amputation or the blindness questionnaires was asked to indicate whether he was ever well acquainted with someone suffering the relevant disability. As is noted in Table 5, 35% and 29%, respectively, answered this question affirmatively. (Due to the variety of disabilities covered in the cosmetic conditions questionnaire, the item on familiarity was excluded.)

Data on the Repeat Group of 233 were collected so that, when the actual scales from the three questionnaires were developed, the interrelationships among them could be studied. It was desirable to have a repeat group whose characteristics were similar to those of the total Developmental Samples. It was not possible, however, to obtain responses to all three questionnaires from the same high school population.

Tables 3 and 4 show the characteristics of the Repeat Group in terms of sex, age, and education. An assay of the degree to which the Repeat Group resembles the three Developmental Samples must be made indirectly since direct comparisons of the group means would be confounded by their part-whole relationship. Instead, then, characteristics of those subjects who were not included in the Repeat Group (Remainder Group) for each questionnaire are compared with characteristics of the Repeat Group. Table 5 contains the data on these various comparisons.

It can be seen that the Repeats and the Remainders do not differ significantly (t-tests of proportions) in respect to sex-ratios or contact. It may be concluded, then, that the Repeat Group also does not differ significantly from the Developmental Samples in these respects. On the other hand the Repeat Group, due to the omission of high-school-age-subjects, does differ

TABLE 1

Age of Respondents to each Questionnaire[a]

(Frequency Distributions, Means and Standard Deviations)

Amputation				Blindness				Cosmetic Conditions			
Age in Years	Males	Females	Total	Age in Years	Males	Females	Total	Age in Years	Males	Females	Total
10-19[b]	95	167	262	10-19[b]	82	146	228	10-19[b]	100	179	279
20-29	55	60	115	20-29	64	70	134	20-29	64	67	131
30-39	18	19	37	30-39	15	19	34	30-39	16	21	37
40-49	18	19	37	40-49	25	28	53	40-49	18	24	42
50-59	15	14	29	50-59	11	10	21	50-59	17	14	31
N	201	279	480[c]		197	273	470[d]		215	305	520
M	26.03	23.75	24.70		26.81	24.90	25.70		25.94	23.91	24.75
SD			11.04				10.56				11.03

[a] 233 respondents answered all three questionnaires.

[b] Ungrouped rather than grouped data were used for this category in calculating the summary statistics.

[c] Sex unspecified for three additional respondents.

[d] Sex unspecified for seven additional respondents.

TABLE 2

Education of Respondents to each Questionnaire[a]

(Frequency Distributions, Means and Standard Deviations)

Amputation				Blindness				Cosmetic Conditions			
Years of School Completed	Males	Females	Total	Years of School Completed	Males	Females	Total	Years of School Completed	Males	Females	Total
6	-	1	1	6	1	2	3	6	1	1	2
8	6	2	8	8	6	5	11	8	8	5	13
9	1	-	1	9	1	-	1	9	4	3	7
10	14	15	29	10	24	21	45	10	11	15	26
11	63	79	142	11	46	66	112	11	62	93	155
12	30	90	120	12	22	74	96	12	28	88	116
13	14	29	43	13	20	33	53	13	23	31	54
14	14	19	33	14	9	22	31	14	8	20	28
15	37	33	70	15	42	39	81	15	41	39	80
16	15	7	22	16	17	6	23	16	24	9	33
17	7	4	11	17	9	5	14	17	5	1	6
N	201	279	480[b]		197	273	470[c]		215	305	520
M	12.65	12.33	12.46		12.76	12.38	12.54		12.69	12.23	12.42
SD			1.92				2.09				2.02

[a] 233 respondents answered all three questionnaires.

[b] Sex unspecified for three additional respondents.

[c] Sex unspecified for seven additional respondents.

TABLE 3

Age of Respondents - Repeat Group[a]

(Frequency Distributions, Means and Standard Deviations)

Age in Years	Males	Females	Total
10 - 19	18	60	78
20 - 29	40	49	89
30 - 39	9	13	22
40 - 49	12	13	25
50 - 59	10	9	19
N	89	144	233
M	30.36	26.44	27.94
SD			11.31

[a] These respondents answered all three questionnaires.

significantly from the Remainder Groups with regard to age and education. Estimated ω^2 values indicate that 4 to 8% of age variance is accounted for by group membership and that 10 to 15% of variance in years of education is accounted for by group membership. These values are considerable overstatements[5] of the Repeat Group-Developmental Sample differences. The influence of the age-education variable on scale scores will be examined below.

Three subgroups of interest can be identified within the total sample. All but a few of the high school subjects were obtained from the junior and senior classes of a Brooklyn general and academic high school. These subjects were almost entirely from upper lower-class homes, and included many Negroes and some Puerto Ricans. A majority of the other children were of Italian and German descent. The number of questionnaires from this school

---

[5] Estimated ω^2 (omega, squared) values are always rough approximations, calculated from sample statistics, of theoretical population values. Omega squared is an index of the strength of association between the independent and dependent variables. It is a measure of the relative reduction of uncertainty about one measure gained from knowing another (Hays, 1963, pp. 325-327).

TABLE 4

Education of Respondents - Repeat Group[a]

(Frequency Distributions, Means and Standard Deviations)

Years of School Completed	Males	Females	Total
6	-	1	1
8	4	2	6
9	1	-	1
10	2	4	6
11	5	2	7
12	14	63	77
13	13	24	37
14	4	15	19
15	32	26	58
16	11	6	17
17	3	1	4
N	89	144	233
M	13.66	12.95	13.22
SD			1.91

[a] These respondents answered all three questionnaires.

were amputation - 150, blindness - 139, and cosmetic conditions - 171, with approximately the same proportions (2 to 3) of males to females. The 93 physical therapy majors, of whom all but 15 were freshmen and sophomores, responded to all three questionnaires. There was among them an overwhelming predominance of females to males (77 to16) and almost all were between 18 and 20 years of age. Forty other persons were psychology majors enrolled in two psychometrics courses at the City College of the City University of New York, and took all three questionnaires. The group was predominantly male (29 to 11). In the discussion of results below, the responses of these subgroups will be reported and examined.

TABLE 5

Comparison of Demographic Measures on

Developmental, Repeat and Remainder Groups

Group		N	Age Mean	Age SD	Education Mean	Education SD	Sex p_{males}	Contact p_{yes}
1. Developmental	A	480	24.70	11.04	12.46	1.92	.42	.35
2. Developmental	B	470	25.70	10.56	12.54	2.09	.42	.29
3. Developmental	C	520	24.75	11.03	12.42	2.02	.41	(not asked)
4. Remainder	A	247	21.65	9.88	11.72	1.62	.45	.34
5. Remainder	B	237	23.51	9.28	11.88	2.16	.45	.27
6. Remainder	C	287	22.17	10.11	11.77	1.84	.44	(not asked)
7. Repeat		233	27.94	11.31	13.22	1.91	.38	Amputation .36 Blindness .31
Comparison of Remainders and Repeats			t_{D_M}	est. ω^2	t_{D_M}	est. ω^2	t_{D_p}	t_{D_p}
4 vs. 7			6.46*	.078	9.31*	.152	1.57	0.50
5 vs. 7			4.63*	.042	7.17*	.099	1.58	0.99
6 vs. 7			6.06*	.064	8.78*	.128	1.31	

Note. - Designations A, B, and C after Developmental and Remainder groups refer to DFS - Amputation, Blindness, and Cosmetic Conditions.

*$p < .01$.

Extraction of Factors[6]

Principal components factors were extracted from the matrix of product-moment correlations between items on each questionnaire. For each questionnaire, two rotations to an orthogonal, simple structure solution by the normal varimax method (Kaiser, 1958) were inspected (Amputation - 7 and 9 factors; Blindness - 7 and 9 factors; Cosmetic Conditions - 6 and 8 factors). Five of the DFS-A factors selected were from the seven-factor solution and two were from the nine-factor rotation. The two amputation factors from the nine-factor solution carried the same meaning as their seven-factor counterparts, but were more clearly defined. Data from both rotations were also assessed in the case of the DFS-B, but all seven factors in this case were drawn from the nine-factor solution. Of the two remaining factors, the first was discarded because it failed to account for a substantial proportion of the common variance. The second, although accounting for 9% of the common variance, proved difficult to interpret, contained items with high secondary loadings on numerous other factors and, as a scale, was estimated as having a relatively low internal consistency reliability. In the case of the DFS-C, all six factors of one rotation were accepted.

The results indicated that although the specific names of factors in certain instances might differ from those given in the previous factor analysis, a high degree of factorial similarity was maintained.

---

[6] The correlation matrix and the unrotated orthogonal factor solutions for each of the three questionnaires will be deposited with NAPS. For all or parts of this material, order NAPS Document 00435 from ASIS National Auxiliary Publications Service, c/o CCM Information Sciences, Inc., 22 West 34th Street, New York, New York 10001; remitting $2.00 for microfiche or $6.00 for photocopies. The rotated matrices are in Appendix C.

The initial factor analyses were performed by Dr. Richard Nisbett.

Chapter 3

DIMENSIONS OF ATTITUDES

The factorial results are interpreted as representing salient dimensions of attitudes toward the disabled. A description of each of these factors follows. They are presented in terms of endorsement of the item content and do not necessarily reflect the typical responses of the developmental samples. Considerable effort was devoted to assigning meaningful names to the factors in the hope that useful experiment hypotheses might be suggested thereby.

AMPUTATION

The following seven factors were obtained in the study of attitudes toward amputation: Interaction Strain, Rejection of Intimacy, Generalized Rejection, Authoritarian Virtuousness, Inferred Emotional Consequences, Distressed Identification, and Imputed Functional Limitations.

1A – Interaction Strain

The predominant tone of this factor, which accounted for 23% of the estimated common variance of the questionnaire, is one of distinct uneasiness in the presence of an amputee in a wide variety of social situations. This is mirrored most directly and succinctly in the highest loading item, "I feel uneasy when I come near an amputee." Many items additionally involve uncertainty about how to deal with the disabled (e.g., "I would feel nervous with an amputee because a lot of the time I wouldn't know the right thing to do"). Conversation is felt to be inhibited and leading to tension, as reflected in items such as "I would be afraid of saying the wrong thing in talking to an amputee." Association with an amputee is felt to be embarrassing "in public" and, on a more specific level, disruptive to one's other friendships. While most of the items here refer to the respondent's own reaction, there is also an expectation that other non-amputees experience similar discomfort.

A second important group of items in this factor refer to the arousal of disgust or revulsion–as, for example, "When I see an amputee I get a sickish feeling in my stomach." The juxtaposition of these two types of items leads to the hypothesis that the issue of how to deal with an amputee is not simply a matter of ignorance or uncertainty. Rather, emotional aversion may inhibit spontaneous interaction, thus contributing to the experience of strain and to the need for more explicit behavioral guidelines. Whether the need to know the "correct" things to do is, in addition, a defensive reaction against revealing one's feelings of revulsion to the amputee, remains a question for empirical verification.

This factor contains a relatively high degree of self-reference. It expresses essentially negative reactions without in any way blaming the amputee, is neutral with regard to desire for or rejection of contact, and does not advocate any general policies regarding amputees.

2A – Rejection of Intimacy

The dominant theme of this factor, which accounted for 14% of the estimated common variance, is the rejection of close, particularly familial, relationships with amputees. An unwillingness to date, fall in love with, or marry an amputee is expressed, and the idea of having an amputee child is strongly rejected: "I would rather not have any children than have a child who is an amputee." Marriage to an amputee is seen as limiting the formation of new friendships, and amputees are characterized as great burdens on their families.

A number of items in this factor (e.g., "I would rather be dead than lose both arms") reflect a greater degree of deep personal involvement than is present in most of the other factors. The basis for rejection of intimate relationships with amputees might, then, be seen as the strong rejection of amputation in the self, and by extension in those with whom one most closely identifies.

Unlike the previous scale, which emerged from a seven-factor rotational solution, this 14-item scale was derived wholly from a nine-factor solution.

3A – Generalized Rejection

The content of this factor (which accounted for 24% of the estimated common variance) is distinctly "anti-amputee"; it contains negative descriptions of the amputee, unpleasant personal reactions, and policy items advocating unfavorable treatment. Segregation of the amputee from others is a prominant theme, with the high loading item being, "Amputees ought to be kept apart from the normal community." Disturbance in empathic relations is emphasized, as epitomized in the item, "Amputees and normal people can't really understand each other." It is felt that amputees have "bad characters," and "may have done something to deserve" their impairment. Aversive reactions are expressed, e.g., "There is something frightening about the way amputees look," and reluctance to interact in intimate (close friends) or formal (on-the-job) situations is clear.

4A – Authoritarian Virtuousness

This factor, which accounted for 21% of the estimated common variance, is defined by a large number of ostensibly pro-amputee items and by a few items from the California *F*-scale. It is the only factor of the amputation questionnaire with a large group of items which seem positive in tone. These are of three general sorts: the first type portray the amputee as having special gifts and exceptional personality characteristics – "Because of their disability, amputees are probably closer to the really important things in life"; the second type advocate special tolerance of amputees and suggest special treatment – "People should be especially tolerant of amputees"; the third involve self-reference and describe the respondent as extra favorable toward amputees – "I would go out of my way to be friendly with an amputee," and "I am more sympathetic than most toward amputees."

It is illuminating to compare the positively-toned items which cluster in this factor with the pro-amputee items of other factors of this questionnaire. The latter have an essentially egalitarian quality: "Amputees are pretty much like everybody else after you get to know them," and "I would date an amputee as readily as anyone else," etc. In contrast, the items loading on this factor are overfavorable, presenting the amputee as someone special, meriting preferential treatment.

The simultaneous loading of items endowing amputees with exceptional qualities and others pleading for tolerance and special treatment for them because of their shortcomings gives this factor a double-edged character. When a similar factor emerged in an earlier study of the ATDP (Siller & Chipman, 1964b) it included items which more clearly imputed inferior status to amputees. This earlier factor was labelled Benevolent Superiority. The implication of inferiority is, however, less apparent in the present factor. Rather there is an explicit quality of conscious rectitude, particularly in the third type of item mentioned above, which accounts for the use of the term Virtuousness in the factor name.

The first half of the factor name related to the clustering, with equally high loadings, of several *F*-scale items, making it clear that the themes of special benevolence and of respect for authority are intimately associated in this factor. This association is somewhat unusual. The type of disability items included are not inconsistent with the general image of authoritarian-based attitudes, being rather sweeping and generalized, with apparently moralistic implications. However, the expressed attitudes toward the "unfit" are benevolent rather than, as might have been anticipated, hostile and punitive. We have speculated that the issue of perceived responsibility for a deviation is important in determining the direction of Authoritarian attitudes. It is expected that persons high on Authoritarianism would express hostility toward those who deliberately choose to be different, or whose "weakness" or "badness" is believed to be under conscious control (criminals, Communists) but would express sympathetic, tolerant, charitable attitudes toward those perceived as "suffering unfortunates" whose impairment has been visited upon them. (Prejudice toward certain groups might seem to fall outside this kind of analysis since, obviously, one is not responsible for being a Negro, for example, or a Jew. However, usually personality and intellectual deficiencies attributed to the "out-group" are incorporated within the belief system supporting the prejudice, i.e., not dark skin per se in the Negro, but laziness, sensuality, etc., or greediness in the Jew. Invoking the concept of personal responsibility might serve to clarify some of the differential reactions to varied outgroups.)

To summarize, the disability items loading on this factor describe the amputee as having special gifts and desirable personal traits, advocate a general policy of favorable treatment and tolerant understanding, and picture the respondent himself as especially warm and sympathetic toward the disabled. The over-all impression is of a "do-gooder" orientation, involving a rather undifferentiated, positive, benevolent approach whose origins would appear to be in a wider moralistic system and are consistent with a "charitable" self-image maintained by the respondent. (This factor resembles in many aspects the Benevolence factor obtained by Cohen and Struening, 1962, in the development of the OMI.)

5A – Inferred Emotional Consequences

This factor accounted for 10% of the estimated common variance. It consists almost entirely of statements intensely hostile to the amputee. The items consistently refer to the amputee's character and emotionality; neither the respondent's personal reaction nor advocacy of general policy are included. Maladjustment and ill-temper are perceived to be very frequently associated with amputation. Self-consciousness, irritability, and hypersensitivity are generally attributed to amputees. The following items are typical: "Amputees feel sorry for themselves...," "Most amputees are bitter...," "Amputees are often angry at the world...," "Amputees who seem outwardly adjusted are often inwardly unhappy." This factor is distinguished from Generalized Rejection in that the latter contains much self-reference, strongly advocates segregation, and is less intensely negative in its description of the amputee.

6A – Distressed Identification

This factor (accounting for 4% of the estimated common variance) involves highly personalized reactions to disability; the items are exclusively of the self-reference type with the amputee frequently named as the stimulus which activates anxiety about the respondent's own vulnerability. Unelicited specific anxiety is expressed, as in the item "I am sometimes afraid I will lose a limb," as well as an induced uneasiness, as in "Seeing an amputee makes me worry about unpleasant things that might happen to me." An element of active identification is conveyed in the item "When I see an amputee, I try to imagine what it is like to lose a limb."

The emotionally-toned personal involvement would appear to be as intense in this factor as it is in Rejection of Intimacy, but the notable difference between the two is that Distressed Identification does not include reference to a tendency to reject the amputee.

There seems to be some relationship between this factor, with its emphasis on the respondent's concern about physical loss, and the concept of castration anxiety. Although there are only four items with principal loadings in this factor, when scored as a scale it shows a sufficiently high reliability (.80) which, in addition to a generally low correlation with scales derived from the other factors of the Amputation questionnaire, suggests that it is a meaningful and fairly independent factor. Research into its possible association with the concept of castration anxiety may prove to be fruitful and enlightening.

The nine-factor rotational solution provided the basis for this scale.

7A – Imputed Functional Limitations

This factor (which accounted for 8% of the estimated common variance) focuses quite specifically on whether the amputee can function adequately and effectively in a number of typical and crucial situations. Comparisons with the capabilities of nondisabled appear in a number of items. In contrast to the preceding factors, item content is primarily "factual" and objective in tone, having only minimal reference to the personal reactions of the respondent. The image conveyed is of the amputee as functionally limited, dependent upon others for assistance, and having difficulty providing financial support for himself and his family. Prosthetic devices are seen as not fully compensating for the loss of a limb. Although this factor appears to be "Objective," data presented later (Tables 13 and 16) show that maintenance of this attitude probably reflects a strong affective reaction. This, in turn, suggests that imputation of functional limitations is used as a means of rationalizing aversive feelings.

BLINDNESS

Virtually the same seven factors that characterized attitudes toward amputation have also been found to be the basis of attitudes toward the blind: Interaction Strain, Rejection of Intimacy, Generalized Rejection, Authoritarian Virtuousness, Inferred Emotional Consequences, Distressed Identification, Imputed Functional Limitations.

1B – Interaction Strain

Twelve per cent of the estimated common variance was accounted for by this factor. Its predominant tone closely resembles that of the same-named factor of the amputation questionnaire; both emphasize the experience of uneasiness, discomfort and embarrassment when interacting with the disabled. There is a stronger emphasis on avoiding social contact in the blindness factor and a somewhat weaker emphasis on aversive feelings. The shared content, however, is striking and it is clear that these factors of the two questionnaires primarily tap a personal feeling of tension and strain in a wide variety of social encounters.

2B – Rejection of Intimacy

The dominant theme of this factor is very close to that of the parallel factor derived from the questionnaire on amputation. It is one of rejection of intimate, particularly familial, relationships with blind people; there is an unwillingness to date, fall in love with or marry a blind person, and there is a strong assertion that "I would rather not have any children than have a child who is blind."

The sense of personal involvement and self-reference is strong in this factor. Even more clearly than in the case of the factor derived from the amputation questionnaire, the rejection of blindness in extensions of the self implies concern about the self.

This factor accounted for 7% of the estimated shared variance.

3B – Generalized Rejection

This factor accounted for the largest single share of the estimated common variance (23%). As in the comparable amputation factor, a generalized negative orientation is evident. The blind are characterized unfavorably as "mean and nasty," "unpredictable," and "irritable," eliciting such aversive reactions as revulsion. Disturbance in empathic relations is heavily emphasized, and segregation is advocated: in both the amputation and blindness analyses, the top loading item was "Blind people (or Amputees) ought to be kept apart from the normal community."

4B – Authoritarian Virtuousness

This factor accounted for 17% of the estimated shared variance. As in the case with the Authoritarian Virtuousness amputee factor, this one, too, is ostensibly "pro-disabled," projecting an image of the blind as having special gifts and desirable personal characteristics. Blindness is seen as "improving a person's character," and blind people are described as "probably closer to the really important things of life." The self-reference elements characterize the respondent as particularly warm, sympathetic, and ready to befriend the blind, and a general policy of tolerance is advocated. The Authoritarian (*F*-type) items included in the questionnaire loaded on this factor, as they did in the analysis of the amputation questionnaire.

5B – Inferred Emotional Consequences

This factor, which accounted for 9% of the estimated common variance, closely resembles the same-named factor derived from the amputation questionnaire, focusing almost exclusively on the psychological characteristics of the disabled. The blind are pictured quite unfavorably as maladjusted, self-pitying, hypersensitive, angry, and using their disability to exploit others. They are perceived as humiliatingly dependent, but tending to do dangerous things rather than accept help. The general motif of this factor seems to be that psychological warping is a frequent consequence of blindness.

6B – Distressed Identification

This factor (accounting for 8% of the common variance) emerges somewhat more strongly from the blindness questionnaire than from amputation, although the highest loading items are identical. The primary emphasis in both is that the disabled person serves as a stimulus activating strong anxiety about one's own vulnerability. In addition, however, a quality emerges from the blindness questionnaire which implies that the blind arouse curiosity, pity and "a sickish feeling" in the stomach of the beholder. The hypothesis concerning the relationship of Distressed Identification to castration anxiety, advanced in discussing this same factor on amputation, seems applicable here as well.

7B – Imputed Functional Limitations

This factor, accounting for 11% of the estimated shared variance, focuses quite specifically on the ability of the blind person to function in his environment. While the same-named factor from amputation deals with this theme too, the blindness factor contains many more references to particular occupations. The amputation factor stresses over-all functional limitations, physical dependency, and difficulties in earning money, while the blindness factor, although it contains such items, specifically depicts the blind as unable to do a good job as a lawyer, politician, doctor, grover, mother, and President. Thus, while the dimension of Imputed Functional Limitations is common to both questionnaires, there seems to be a more sharply defined image of the functional limitations of the blind than of amputees. As with the factor on amputation, subsequent data (Tables 13 and 16) demonstrate that the underlying attitude is aversive.

COSMETIC CONDITIONS

In the construction of item pools for the amputation and blindness questionnaires, identical item stems were used whenever possible. However, only a limited correspondence between those items and the ones used for Cosmetic Conditions could be achieved, since certain types were neither appropriate nor relevant, e.g., items concerned with functional capability. Therefore, although parallelism was maintained wherever possible, a substantial number of items were either modified significantly or dropped entirely.

Despite the heterogeneity of the disability conditions mentioned in the cosmetic questionnaire and the differences in the wording of items, some of the factorial dimensions identified for blindness and amputation were found here also. Two factors, Interaction Strain and Rejection of Intimacy, were sufficiently similar in content (and scales based on them correlated highly enough with scales based on these factors on the other questionnaires) to be named identically.

Two other factors of the cosmetic conditions questionnaire were roughly analogous to factors educed from the amputation and blindness items, but they were sufficiently different to warrant different titles. These cosmetic factors, Reluctant Aversion and Superficial Empathy, generally correspond to Generalized Rejection and Authoritarian Virtuousness from the other two questionnaires. The remaining factors (Qualified Aversion and Proximate Offensiveness) are unique to the cosmetic items. Table 13 illustrates the relationships between the scales that were developed from these factors.

1C – Interaction Strain

This factor accounted for 21% of the estimated common variance of the items. As in the blindness and amputation questionnaires, a major portion of this factor relates to feelings of uneasiness and constraint in interactions with the disfigured. Sample items are "I think I would be upset at the idea of spending an evening with someone whose face was badly scarred" and "I would feel very uncomfortable if a person with severe facial scars talked to me about his appearance." The element of emotional aversion is also present, as it was on the corresponding amputation factor, but not as strongly. Themes of embarrassment in public and of disruption of one's other friendships as a consequence of association with the disfigured, occur on this as they did on the comparable factors referring to the other disabilities. Almost all the items refer to the respondent's reaction; there are very few describing the disabled or advocating general policy.

Items referring to amputation and blindness which appeared in this and the other questionnaires, which showed primary loadings on the Interaction Strain factors of their original questionnaires had primary loadings on the present factor as well.

2C – Rejection of Intimacy

This factor accounted for the largest share of the estimated common variance (28%). As with the comparable factors on blindness and amputation, it focuses on the rejection of intimate, particularly familial, contacts with the disabled or disfigured. Such relationships are rejected for the self, for members of one's family, and for close friends. Respondents agreeing with the items do not want amputees, blind people, ugly people, those with heart conditions or with severe scarring to be involved in their lives in any permanent, important, or intimate way. Typical items are: "I would be upset if a child of mine were dating someone I considered very ugly"; "Even if I fell in love with a person I thought was very ugly, I don't think I would actually be willing to get married"; "I would rather have no children than have a child who was very ugly"; "I wouldn't let myself fall in love with an amputee."

3C – Reluctant Aversion

This factor, which accounted for 13% of the estimated shared variance, is similar to the Generalized Rejection factors of amputation and blindness, in that aversion is expressed, and segregation desired; e.g., "Ugly people are best off staying among themselves." However, items specifically asserting a disturbance of empathy between disabled and nondisabled are not included in this factor, and an element of "apology" for the aversive reaction is prominent: e.g., "I must admit that I tend to connect bad skin with an unpleasant personality"; "I am sometimes ashamed of the way I feel about people who have strong body odor." It is possible that a recognition of the discrepancy between negative feelings and socially acceptable behavior or rational beliefs accounts for the reluctant tone of these items. Whether this "apology" implies a more basic built is a matter for empirical investigation.

4C – Superficial Empathy

This factor accounted for the smallest part of the estimated common variance (10%). The items loading on it focus primarily on the psychological characteristics of those afflicted with obvious cosmetic impairments. Unlike the other factors, the affective implications are unclear: i.e., the direction of feeling cannot be inferred readily from the content. Both positive and negative traits are attributed: for example, "Really ugly-looking people are often angry at the world," and "People who are physically unattractive often develop unusually nice personalities." Some empathy, or a desire for empathy, is expressed in several of the items, e.g., "I think it would be a valuable experience to be really ugly for a short period of time"; and a few of the self-reference statements express a positive orientation, as "I am more sympathetic than most toward overweight people."

The issue of ambivalent feelings and what it means to endow individuals with special characteristics is relevant for this factor as it was for the two Authoritarian Virtuousness factors on amputation and blindness. The term Superficial Empathy was employed to indicate the uncertainty of the ultimate meaning of a high score on this factor.

5C – Qualified Aversion

This factor, which accounted for 15% of the estimated common variance, does not correspond to any factor identified for amputation or blindness. Qualified expression of emotional aversion is its distinguishing characteristic. This qualification is manifest in the presence of modifiers such as, "somehow," "I have some feeling" and "in general." In contrast to Reluctant Aversion, these items rarely sound apologetic.

The types of cosmetic impairment which load here are generally of a class which is assumed controllable, i.e., dandruff, acne, overweight. A typical item is "I feel somewhat disgusted when I come near a very overweight person."

6C – Proximate Offensiveness

The most salient content of this factor (13% of the estimated shared variance) is moral indignation in the context of close physical contact. As in 5C, the majority of items deal with cosmetic impairments which are assumed to be controllable and to which are attached strong social stigma, e.g., pimples, body odor, bad breath. As with Qualified Aversion, there is a quality of disgust expressed. In addition, however, there is a note of moralistic disapproval: e.g., "People with body odor don't have enough respect for the feelings of others"; "There is no excuse for bad breath." Subsequent investigation is likely to indicate that these categories of cosmetic impairment, e.g., halitosis, body odor, etc. are seen more as evidence of "poor habits" than as physical conditions.

Chapter 4

THE DISABILITY FACTOR SCALES

The Disability Factor Scales for Amputation, Blindness and Cosmetic Conditions were derived directly from the dimensions of attitudes described in Chapter 3. Just as each factor was interpreted as representing a dimension of attitude toward the disabled, the items comprising that factor were assumed to be measures of that dimension. The logic of scale refinement thus was based upon psychometric utility.

ESTABLISHMENT OF FACTOR SCALES

An estimate of the reliability of each factor scale was made using all of the items loading on that factor and, then, with successive omissions of low-loading items. An approximation formula derived by Dr. Jacob Cohen (personal communication) was employed for this purpose

$$r_{xx} \cong \frac{2n\,\Sigma a_i a_j}{(n-1)(n+2\Sigma a_i a_j)},$$

$$\text{with } n = \text{number of items and } \quad \Sigma a_i a_j = \sum_{i=1}^{n} \sum_{j=i+1}^{n} a_i a_j,$$

or the sum of all the different cross-products of the factor loadings of the items in the scale. Using this estimate, items were dropped which did not add materially to the reliability of that factor. Most of the items omitted were from the first few factors, since these were quite large. In some instances, items were included in scales on the basis of their secondary rather than primary factor loadings. This was done when the item contributed more to the scale reliability of the factor on which it had a secondary loading than to the one on which it had a primary loading. In general, such a situation occurred when the primary loading was on a factor which contained many items and the secondary loading was comparatively high on a smaller factor.

Each item was assigned to and scored in only one factor scale. The standard deviations of the individual items were quite similar, so it was not necessary to standardize item scores. Items were not differentially weighted, as Trites and Sells (1955) have indicated that weighting items as a function of their factor loadings has little advantage over the simpler unit weights.

The Disability Factor Scales consist of that set of items from each factor which survived the reduction process. Each scale carries the same name as the factor from which it was derived. The items were reduced from 145 to 101 for the Amputation questionnaire, from 145 to 105 for Blindness, and from 84 to 80 for Cosmetic Conditions.

All subsequent description and statistics are based upon these scales. The populations upon which the figures are based were the Developmental Samples presented in Chapter 2.

ADMINISTRATION AND SCORING

The three questionnaires of the Disability Factor Scales are printed in four-page booklets which can be administered individually or in a group setting. Each item may be answered along the following scale: strongly agree, agree, not sure but probably agree, not sure but probably disagree, disagree, strongly disagree.[7]

The DFS-A and DFS-B generally take up to 20 minutes for administration, while the DFS-C takes up to 15 minutes. However, there is no time limit

Several options are available for scoring the DFS. They can be scored by means of plastic scoring keys or by means of a computer program which has been developed. Both are available from the senior author. They can also be scored by hand but this is not recommended.[8]

---

[7] Agreement with the items is scored 1-3 and disagreement 4-6; thus, a low score indicates a greater amount, and a high score a lesser amount, of the quality denoted by the factor names. For most factors, this means that a low score suggests a more negative attitude than does a high score. The exceptions are factors 4A, 4B, 4C, for which a low score is interpreted as "overfavorability," and 6A and 6B, where a low score reflects distressed identification with the disabled.

[8] Conversion of raw scores to sten scores: the Developmental Sample for each questionnaire was used as a basic referent group from which sten scores (Canfield, 1951) were computed. Sten scores are linear transformations in which the new means becomes 4.5, the standard deviation 2, and scores range from 0-9. The formula for the conversion is sten $= \frac{2}{\sigma_x}(X - \bar{X}) + 4.5$. Sten conversion tables for each DFS questionnaire are available upon request. Use of sten scores would facilitate comparisons of relative standings across scales for individuals or groups.

PSYCHOMETRIC CHARACTERISTICS OF THE DISABILITY FACTOR SCALES

Summary data on each scale for the Developmental Samples are contained in Table 6. For each item of the three questionnaires, the mean, standard deviation and primary factor loading are listed by scale in Appendix A.

Internal Consistency Reliability

The internal consistency reliability coefficients of the scales are listed in Table 7. The coefficients were computed using the variance form of the general formulae for the reliability coefficient (equivalent to Cronbach's Alpha, Guttman's L_3, and the generalized K-R 20) described by Tryon (1957, p. 232). This coefficient estimates the correlation between the total score of k-items drawn randomly from a particular domain with the total score of another random set of k-items from that domain. The computing formula was

$$r_{tt} = \frac{n}{n-1}\left[1 - \frac{\Sigma V_i}{V_t}\right],$$

where V_i = variance of item i, V_t = the variance of the scale, and n = number of items in the scale. Scale reliabilities on the DFS-A range from .80 to .92. Even the four-item scale on Distressed Identification has an acceptable reliability of .80. Similar reliabilities were found for the DFS-B, where coefficients ranged from .80 to .91. The reliability coefficients on the DFS-C ranged from .62 to .89, with most of the values falling in the .70's. It is apparent that the scales as a whole are highly reliable and suitable for experimental use.

Many of the reliabilities are of such a magnitude that the scale can be considered eventually for differential use. We strongly urge that this not be done until the properties of the instruments have been more thoroughly explored, particularly in regard to predictive validity.

When sten scores are obtained on various scales, evaluation of differences, as in profile analyses, must take into account the extent to which those scales are intercorrelated (see Table 13). Since many of the scales have fairly substantial intercorrelations, the reliability of sten difference scores between such scales will be low even though their individual reliabilities are high. For example, the Rejection of Intimacy and Generalized Rejection Scales on the DFS-A correlate .64 with each other, and the scales have reliabilities of .88 and .92, respectively. The reliability of a difference between the two scales

TABLE 6

Number of Items, Mean Score, Standard Deviation, and Standard Error of Measurement for each Scale

Scales	No. of Items	M	SD	σ_m
Amputation (N = 483)				
1A Interaction Strain	19	77.95	14.20	4.26
2A Rejection of Intimacy	14	55.59	11.08	3.83
3A Generalized Rejection	23	112.99	13.74	3.89
4A Authoritarian Virtuousness	18	61.72	13.22	4.57
5A Inferred Emotional Consequences	11	46.08	7.42	2.97
6A Distressed Identification	4	14.58	4.58	2.05
7A Imputed Functional Limitations	12	47.20	8.21	3.58
Blindness (N = 477)				
1B Interaction Strain	15	67.54	10.26	3.55
2B Rejection of Intimacy	12	49.03	9.40	3.76
3B Generalized Rejection	23	112.04	13.35	4.00
4B Authoritarian Virtuousness	17	56.08	12.86	4.64
5B Inferred Emotional Consequences	15	62.15	8.97	3.70
6B Distressed Identification	10	38.71	8.39	3.66
7B Imputed Functional Limitations	13	48.96	9.42	4.21
Cosmetic Conditions (N = 520)				
1C Interaction Strain	17	65.72	11.96	4.78
2C Rejection of Intimacy	18	75.47	13.95	4.63
3C Reluctant Aversion	13	59.30	7.44	3.94
4C Superficial Empathy	12	39.67	6.83	4.21
5C Qualified Aversion	10	41.49	7.32	3.51
6C Proximate Offensiveness	10	32.95	7.56	3.86

TABLE 7

Internal Consistency and Test-Retest Reliability for each Scale

Amputation

	N	Time	1A	2A	3A	4A	5A	6A	7A
Internal Consistency	483	--	91	88	92	88	84	80	81
Test-Retest	97	2 wks.	90	92	86	82	76	80	87

Blindness

	N	Time	1B	2B	3B	4B	5B	6B	7B
Internal Consistency	477	--	88	84	91	87	83	81	80
Test-Retest	107	2 wks.	83	84	69	86	80	85	84
Test-Retest	37	3 mos.	81	87	88	85	86	83	86

Cosmetic Conditions

	N	Time	1C	2C	3C	4C	5C	6C
Internal Consistency	520	--	84	89	72	62	77	74
Test-Retest	65	2 wks.	88	88	77	84	89	79
Test-Retest	93	3 mos.	76	74	61	71	68	78

Note. - All decimal points have been omitted.

($r_{x\text{-}y}$) was computed to be .72.[9] This contrasts with a reliability of difference score of .85 for Rejection of Intimacy and Authoritarian Virtuousness, where each scale has a reliability of .88 and the intercorrelation is only .21.

---

[9] The formula for the reliability of difference scores (where standard deviations are equal) is

$$r_{x-y} = \frac{\bar{r} - r_{xy}}{1 - r_{xy}}, \text{ where } r_{x-y} \text{ is the}$$

reliability of the difference between x and y, r_{xy} is the correlation between scales x and y, and $\bar{r}$ is the mean of the reliabilities of tests x and y (adapted from Gulliksen, 1950, p. 777).

It is apparent from Tables 8, 9, and 10 that it would not be appropriate to use difference scores or to develop profiles except in specific instances such as with Authoritarian Virtuousness or Distressed Identification. It should be remembered that for individual comparisons, reliabilities of even .80 are not very secure. A more feasible approach to comparing differences among scale scores will be considered below in Chapter 5 where the 20 separate scales are combined on the basis of a higher-order factor analysis into four "super scales."

TABLE 8

Reliability of Difference Scores on

Amputation Scales

(N = 483)

Scale	2A	3A	4A	5A	6A	7A
1A	64	77	83	71	78	63
2A		72	85	69	81	48
3A			86	73	83	67
4A				80	69	79
5A					77	56
6A						78

Note. - All decimal points have been omitted.

Retest Reliability

In order to investigate the test-retest stability of the scales, additional data were collected from college and community college subjects apart from the developmental samples. Table 7 presents the reliability coefficients resulting from 2-week and 3-month testing intervals. The magnitude of these coefficients are very compatible with the internal consistency reliability data. Both sets of reliability data are at a level very adequate for a research instrument.

Factor Validity

The factor validity coefficients computed by means of Thompson's (1951, pp. 197-199) pooling square are listed in Table 11. The resulting values

TABLE 9

Reliability of Difference Scores on

Blindness Scales

(N = 477)

Scale	2B	3B	4B	5B	6B	7B
1B	68	65	85	60	68	68
2B		71	84	67	73	55
3B			86	65	78	68
4B				80	72	83
5B					66	60
6B						75

Note. - All decimal points have been omitted.

TABLE 10

Reliability of Difference Scores on

Cosmetic Conditions Scales

(N = 520)

Scale	2C	3C	4C	5C	6C
1C	58	57	65	51	52
2C		60	72	55	63
3C			62	53	60
4C				65	57
5C					56

Note. - All decimal points have been omitted.

represent the correlation between the sum of a set of item scores and the factor they share in common. These coefficients range from .64 to .93, and for purposes of group comparisons are all quite satisfactory.

TABLE 11

Factor Validities for Disability Factor Scales

Amputation (N = 483)		Blindness (N = 477)		Cosmetic Conditions (N = 520)	
Scale	Factor Validity	Scale	Factor Validity	Scale	Factor Validity
1A	82	1B	71	1C	76
2A	74	2B	70	2C	83
3A	86	3B	84	3C	73
4A	92	4B	93	4C	78
5A	74	5B	66	5C	73
6A	74	6B	77	6C	75
7A	64	7B	72		

Note. - All decimal points have been omitted.

Construct Validity

The major validational support for the various DFS instruments consists of evidence bearing on their construct validity. The initial concern of any factor-analytic study is the extent to which the resulting factors are descriptive of the underlying domain. In this study, the original input of items was written with the intention of maximizing the inclusion of important basic attitudinal dimensions. Further, the recurrence of factors over the successive analyses (in the face of a variety of factorial procedures) suggests that a stable and meaningful structure is being tapped. The duplication of the final factors on the amputation and blindness questionnaires and the degree of overlap with the DFS-C give additional support to the status of the factors as viable constructs. Siller, et al. (1967), through content analysis of interviews, identified a set of categories underlying reactions to the disabled. The degree of correspondence between these categories and those represented in the DFS is impressive. Certain of the categories are identical: i.e., Imputed Functional Limitations of the DFS is equivalent to the interview-derived Functional

Limitations; Interaction Strain is the same as Strain in Social Interaction. With but a few exceptions, the other interview categories are represented either as distinct factors or as elements in more inclusive factors. The high degree of congruence between the categories based upon interviews and those of the DFS further attests to the psychological meaningfulness of the latter.

The set of factors obtained by Whiteman and Lukoff (1964) in studying sighted people's attitudes toward blindness, despite the small number and specialized nature of the subjects upon which they were based, also emerged in our own analyses either as individual factors or as important components of a factor. That this occurred, even though Whiteman and Lukoff started with initial instruments very different from ours, attests to both the inclusiveness and appropriateness of the factorial dimensions from which the DFS were derived.

Two external sources are also relevant to an assessment of the construct validity of the DFS: the correlations of the DFS with demographic variables previously shown to bear some relationship to attitudes toward the disabled, and correlations between the DFS and the Attitude Toward Disabled Persons Scale.

Demographic Variables – (1) *Sex*: Many previous studies have demonstrated that females tend to have more favorable attitudes toward the disabled than do males (e.g., Jabin, 1965; Siller & Chipman, 1964b; Yuker et al., 1966). Data on the DFS are consistent with this finding: females scored higher on 12 of the 13 scales for which sex was shown to be a significant variable. Only on Superficial Empathy (4C) was the direction reversed, with males obtaining a higher mean.

(2) *Age-Education*: An earlier study (Siller & Chipman, 1964b) noted that high school students tend to be less favorable toward the disabled than are other age-education groups, such as junior high school or college students. This was true on the DFS as well: high school students obtained the lowest mean score on 10 of the 16 scales which were significantly affected by the Age-Education variable.

(3) *Contact*: Degree of contact with the disabled was determined for the amputation and blindness questionnaires (extensive vs. minimal or no contact). In line with previous observations (Jabin, 1965; Siller & Chipman, 1964b) those with extensive contact had more favorable attitudes than those with little contact. Eleven of the 14 scales were significantly related to degree of contact; respondents with extensive contact showed more favorable attitudes on all of these scales.[10]

DFS-ATDP Correlations – Correlations between each of the 20 scales and the ATDP were obtained for 65 physical therapy students and 22 undergraduate psychology majors (see Table 12).[11] The patterns for both groups were identical: all the scales on the DFS-A and B, except Authoritarian Virtuousness and Distressed Identification, correlated significantly with the ATDP. For the most part, for the larger group, these were moderate correlations in the range of .30 to .45. On the DFS-C, only Rejection of Intimacy and Interaction Strain were significantly correlated with the ATDP. The presence of positive correlations between the ATDP and certain of the Factor Scales supports the interpretation of these scales as measures of disability attitude. It has been suggested (Siller, 1966b) that the ATDP is essentially a rough measure of an affect dimension. The results of zero-order and multiple correlations between the DFS and the ATDP are discussed in Chapter 7 in terms of their meaning for the composition of both instruments.

---

[10] Inspection of the data indicated that this finding was not an artifact of the inclusion of the physical therapy group.

Additional evidence bearing on the construct validity of the DFS was available from the 40 undergraduate psychology majors taking a course in psychometrics. Considering the relative homogeneity and specialized nature of this group, the findings must be considered as merely suggestive. These students were given all three DFS questionnaires along with various other scales during the semester. The scales included the Kuder Preference Record, California Test of Mental Maturity, Henmon-Nelson Intelligence Test, Thurstone Interest Schedule, A-S Reaction Study, Allport-Vernon-Lindzey Study of Values; and 22 of these students also took Siller's Disability Social Distance Scale and Feeling Check List, as well as the ATDP as discussed above. One indication of construct validity would be that tests believed to be irrelevant to the construct under examination would prove to be uncorrelated with it. This in fact occurred. Aside from the three disability instruments (ATDP, Social Distance Scale and Feeling Check List), the only measure that showed a substantial relationship with the DFS was the Ascendance score of the A-S Reaction Study. Fourteen of the 20 scales had significant negative correlations with this A-S score. That is, high ascendancy was related to unfavorable attitude. If ascendancy has a hostile component, as well it might, then this finding becomes explicable in the light of findings regarding the relationship of hostility to attitude toward the disabled (Jabin, 1965; Siller et al., 1967).

Concurrent Validity

Concurrent validity information was obtained from the group of Physical Therapy students. It would be expected that such persons, having elected to work with the disabled, would have more favorable attitudes than the general population, and thus would obtain higher scale scores. This was indeed the

---

[11] The standard deviations of these groups (see Appendix B) do not suggest that the correlations are appreciably attenuated by homogeneity.

TABLE 12

Correlations between Disability Factor Scales and Attitude Towards Disabled Persons Scale for Physical Therapy and Psychology Majors

Disability Factor Scales	Physical Therapy (N = 65)	Psychology (N = 22)
1A Interaction Strain	31**	58**
2A Rejection of Intimacy	36**	63**
3A Generalized Rejection	33**	52*
4A Authoritarian Virtuousness	19	25
5A Inferred Emotional Consequences	40**	59*
6A Distressed Identification	06	24
7A Imputed Functional Limitations	29*	69**
1B Interaction Strain	29*	47*
2B Rejection of Intimacy	42**	48*
3B Generalized Rejection	40**	43*
4B Authoritarian Virtuousness	18	-01
5B Inferred Emotional Consequences	32**	45*
6B Distressed Identification	18	25
7B Imputed Functional Limitations	35**	60**
1C Interaction Strain	32**	56**
2C Rejection of Intimacy	40**	49*
3C Reluctant Aversion	05	32
4C Superficial Empathy	22	19
5C Qualified Aversion	19	41
6C Proximate Offensiveness	17	34

Note. - All decimal points have been omitted.

*$p < .05$. For $N = 65$, $r = .24$; for $N = 22$, $r = .42$.

**$p < .01$. For $N = 65$, $r = .31$; for $N = 22$, $r = .54$.

case. On 17 of the 20 scales, the 93 physical therapy students had significantly higher means than did the remainder of the Developmental Samples.

In summary, data from the DFS are consistent with previous findings in regard to the relationships of sex, age-education and contact to attitudes toward the disabled. Twelve of the 20 factor scales show moderate positive correlations with a previously used instrument, the ATDP, while being essentially independent of a host of measures of interests, values and intelligence. There also is extensive congruence between the scales and a set of interview-derived categories of attitude. Further, those who chose to work with disabled persons obtained higher scores than did the general population of respondents.

The identification of discriminable dimensions of attitude in the disability domain necessitates equivalent discriminations within criterion measures. It can be expected that in the process of refining criterion measures to validate the individual factor scales, conceptual clarification of some of the problems of the attitudes toward the disabled will result.

Further research will be directed toward experimental manipulation of variables (and conditions) in order to determine the behavioral correlates of the individual scales, and to add to the assessment of their validity.

Chapter 5

RELATIONSHIPS AMONG SCALES

Although orthogonal rotational procedures were used for the factor analyses of the items, the scale scores have varying degrees of intercorrelation. Had all of the items in a factor matrix been scored on all of the dimensions with the appropriate regression weights, orthogonality would have been preserved. However, once the item clusters had been identified via orthogonal techniques it no longer seemed useful to continue to locate the items on the orthogonal reference axes. By using the top loading items to form scales, and by scoring items on only one scale each, orthogonality was precluded: rather, scales which reflect the actual clusterings of the items were produced.

The scale intercorrelation coefficients, while high in many instances, fall appreciably short of the ceiling estimated by their internal consistency reliability values. Put another way, these scale intercorrelations are not so high as to persuade one that they are basically measuring the identical phenomenon. In fact, enough reliable specific variance remains to justify the opposite assertion, as is shown by the reliabilities of difference scores in Tables 8-10. From the magnitude of these reliabilities it can be concluded that these scales are tapping relatively distinct phenomena.

Table 13 is a master matrix of the scale intercorrelations within and across questionnaires. Entries above the diagonal of the table show the intercorrelations between scales within each of the three questionnaires, and are based on the development samples. The data below the diagonal present the same information on the Repeat Group; in addition, across-questionnaire intercorrelations for this group are given.

INTERRELATIONSHIPS OF SCALES WITHIN QUESTIONNAIRES

There are two 7 x 7 matrices for DFS-A and B respectively, and a 6 x 6 matrix for DFS-C. The figures are based on the entire development sample which completed each instrument. Pearson product-moment coefficients of correlation range from .03 to .71, with the majority at the higher end of the range. Certain scales are highly intercorrelated, while Distressed Identification, Authoritarian Virtuousness and Superficial Empathy are relatively independent of the other scales.

TABLE 13

Intercorrelations of Scales within and between Questionnaires

(Developmental Samples and Repeat Group)

	Amputation							Blindness							Cosmetic Conditions				
Disability Factor Scale	1A	2A	3A	4A	5A	6A	7A	1B	2B	3B	4B	5B	6B	7B	1C	2C	3C	4C	5C
Amputation	Developmental Samples																		
1A Interaction Strain		71	63	39	57	34	62												
2A Rejection of Intimacy	73		64	21	55	17	70												
3A Generalized Rejection	66	69		28	56	17	59												
4A Authoritarian Virtuousness	37	31	35		31	48	26												
5A Inferred Emotional Consequences	62	61	59	36		22	60												
6A Distressed Identification	30	21	23	41	20		16												
7A Imputed Functional Limitations	67	76	65	22	68	18													

Developmental Samples (above the diagonal):

Amputation	N = 483
Blindness	N = 477
Cosmetic Conditions	N = 520

Repeat Group (below the diagonal): N = 233

	Blindness																				
1B	Interaction Strain	73	66	55	29	54	24	57		56	70	16	64	51	50						
2B	Rejection of Intimacy	55	80	54	25	52	14	62	66		57	08	50	35	60						
3B	Generalized Rejection	57	64	73	41	56	22	60	71	67		23	63	36	55						
4B	Authoritarian Virtuousness	15	16	25	76	18	34	02	13	13	27		25	42	03						
5B	Inferred Emotional Consequences	63	66	60	34	72	27	67	67	61	67	27		47	54						
6B	Distressed Identification	50	41	35	34	34	62	36	51	40	41	29	45		22						
7B	Imputed Functional Limitations	48	66	51	14	42	07	66	55	66	62	06	61	28							
	Cosmetic Conditions																				
1C	Interaction Strain	75	69	58	35	48	29	56	67	61	55	24	61	51	48		68	49	23	60	56
2C	Rejection of Intimacy	56	77	61	31	48	14	59	56	76	66	20	57	37	61	74		51	12	62	50
3C	Reluctant Aversion	47	46	64	42	39	24	39	50	42	66	33	44	33	39	54	57		13	46	32
4C	Superficial Empathy	15	11	14	53	26	27	04	07	00	11	47	24	25	-01	17	15	10		12	25
5C	Qualified Aversion	48	45	40	20	34	26	39	45	39	38	09	40	34	31	67	56	47	17		44
6C	Proximate Offensiveness	39	41	36	45	27	20	29	31	38	36	37	31	29	29	54	54	39	27	52	

Repeat Group

Note. - All decimal points have been omitted.

INTERRELATIONSHIPS OF SCALES ACROSS QUESTIONNAIRES

Special provision had been made during the data collection phase of the study to have a number of subjects take all three questionnaires so that the correlations among the 20 scales might be examined. This "Repeat Group," described in Chapter 2, was quite substantial in size (N = 233). Comparison of the data from the Repeat Group to that of the total Developmental Sample for each questionnaire showed that the data from the two are sufficiently similar, in terms of absolute values and of interscale patterns, to permit consideration of all the data within a common frame of reference.

Tables 14 and 15 summarize the relationships of special interest among these scales. Scales with identical labels contain many items with the same stems, generally preserve the item order in terms of their factor loadings, and show substantial correlation across questionnaires. In comparison, the above-mentioned relationships are less strong among scales considered merely analogous (i.e., 3A and B with C, and 4A and B with C); however, the correlations are still impressive.

In Table 14 identically labelled and analogously considered scales are arranged by their titles to illustrate their relationships to each other.

Entries in Table 15 are the coefficients of correlation between parallel scales (i.e., scales listed on the same line in Table 14) and have been abstracted from Table 13. An examination of these patterns should further explicate the labelling process discussed earlier (Chapter 3) when the factors were interpreted.

RELATIONSHIPS AMONG IDENTICALLY LABELLED SCALES

The correlations between the pairs of those scales which have identical names on the three questionnaires (triads 1A, 1B, and 1C and 2A, 2B, and 2C) are the highest ones associated with these scales in the 20 x 20 Repeat matrix. Scales 1C and 2C are the only scales of DFS-C with names identical to those of DFS-A and B.

When the seven identically designated scales of the Amputation and Blindness questionnaires are considered (e.g., 1A with 1B, 5A with 5B, etc.), the above assertion holds true for six of the seven pairs along this matrix diagonal. (The single exception is the correlation between 7A and 7B which was exceeded by one other coefficient, viz., that between 7A and 2A.) The six coefficients in this diagonal are quite high when compared to the correlations between the first two cosmetic scales and their identically named amputation and blindness counterparts. Attenuation in strength of association is to be expected here since the DFS-C is less similar to DFS-A and DFS-B in terms of content than the latter questionnaires are to one another. Furthermore, the cosmetic scales have relatively lower reliabilities than the

TABLE 14

Concordance of Scales across Questionnaires

DFS-Amputation	DFS-Blindness	DFS-Cosmetic Conditions
1A Interaction Strain	1B Interaction Strain	1C Interaction Strain
2A Rejection of Intimacy	2B Rejection of Intimacy	2C Rejection of Intimacy
3A Generalized Rejection	3B Generalized Rejection	3C Reluctant Aversion
4A Authoritarian Virtuousness	4B Authoritarian Virtuousness	4C Superficial Empathy
5A Inferred Emotional Consequences	5B Inferred Emotional Consequences	--------------
6A Distressed Identification	6B Distressed Identification	--------------
7A Imputed Functional Limitations	7B Imputed Functional Limitations	--------------
--------------	--------------	5C Qualified Aversion
--------------	--------------	6C Proximate Offensiveness

TABLE 15

Intercorrelations between Identically and Analogously Named Scales based on Repeat Group

(N = 233)

Scales	r_{AB}	r_{BC}	r_{AC}
1	73	67	75
2	80	76	77
3	73	66	64
4	76	47	53
5	72	--	--
6	62	--	--
7	66	--	--

Note. - All decimal points have been omitted.

others and, consequently, their maximum possible correlations will also be more restricted. This is particularly true in the case of scale 4C, Superficial Empathy, where the r_{tt} = .62.

Relationships among Analogous Scales

Pairs 3A with 3B and 4A with 4B are two of the seven pairs of amputation and blindness scales referred to in the section on identically labelled scales. Because cosmetic scales 3C and 4C show a correspondence to 3A and B and 4A and B respectively, the former are called analogues of the latter. In regard to the actual magnitudes of their correlation coefficients, the DFS-C members of each triad are the more weakly associated ones for the reasons previously mentioned. What is more to the point, however, is that despite the *generally* lower cosmetic intraquestionnaire and interquestionnaire coefficients these two scales (like the cosmetic scales in the two identically labelled triads) have their highest correlations with their amputation and blindness analogues or counterparts.

Effects of Identical Item Stems

As noted earlier (p. 4~~0~~3), pairs of scales with identical names and those considered analogous contain a number of items with the same or very similar stems (e.g., for scale 1A, "I feel uneasy when I come near an amputee" and for scale 1B, "I feel uneasy when I come near a blind person"). The degree to which overlapping item stems *per se* contribute to the correlation between the aforementioned scales was investigated. Wherever identical (or very similar) item stems occurred between two scales one was dropped while the other was retained. Care was taken to maximize the internal consistency reliability of these new scales. The abbreviated scales were rescored and intercorrelated. The magnitude of the correlation coefficients remained essentially unchanged. This indicates that the across-questionnaire correlations between scales which tap the same dimensions are a function of the content of those scales rather than an artifact of item stem identity or similarity.

QUASI-SECOND-ORDER RELATIONSHIPS AMONG SCALES

The substantial correlations among many of the scales (see discussion p. 39) indicated that a higher order factor analysis would be justified. Technically, the term "second-order" refers to factors derived from oblique (correlated) rather than orthogonal (independent) rotational procedures. The term "quasi" will be used to indicate that these higher-order factors were obtained from scales derived from orthogonal rotation. It is likely that the same number and kinds of factors would have been obtained had oblique rotation been used to establish the basic scales (Nunnally, 1967). Assuming this similarity in outcome on the initial factor level, it would follow that very little practical difference in the higher order factor structure would have resulted from using oblique procedures initially.

The 20 x 20 matrix of scale correlations, based on the Repeat Group, was itself factor-analyzed by a principal components procedure in order to identify the "underlying" structure in a minimum of meaningful dimensions. Examination of several varimax solutions led to the acceptance of a four-factor rotation as the most satisfactory approximation of this goal. Table 16 contains the results of this factorial solution.

The effect of the factor analysis was to "pull out" a major affective element for the amputation and the blindness area combined, and for the cosmetic area by itself (albeit with some high secondary loadings on the former). The remaining two factors clearly consisted of the previously established Distressed Identification and Authoritarian Virtuousness-Superficial Empathy clusters.

TABLE 16

Rotated Quasi-Second-Order Factors of Repeat Group Scale Scores

(N = 233)

	Varimax Factors				
Scale	Net Affect	Authoritarian Virtuousness	Distressed Identification	Cosmetic Aversion	h^2
7A	83	-03	16	14	73
2A	80	05	13	36	78
5B	77	20	25	12	71
3B	76	25	05	26	70
2B	73	00	04	38	69
7B	72	-04	-03	24	58
5A	72	21	20	05	60
3A	71	22	08	27	64
1B	69	03	31	30	66
1A	66	08	39	32	70
3C	46	30	06	44	49
4A	22	86	14	15	84
4B	06	83	08	12	71
4C	01	57	21	06	37
6B	29	19	70	21	66
6A	08	30	66	09	55
1C	50	09	32	66	80
5C	28	04	25	64	55
2C	61	11	-02	64	79
6C	19	32	07	62	53
Σa_i^2	6.57	2.31	1.58	2.62	13.08
Common Variance	.50	.18	.12	.20	1.00

Note. - All decimal points are omitted from the factor loadings.

Description of Quasi-Second-Order Factors

Factor I - Net Affect—Eleven scales (1A, 2A, 3A, 5A, 7A, 1B, 2B, 3B, 5B, 7B, and 3C) had primary loadings on this factor which accounted for 50% of the estimated common variance of the scales. While this factor undoubtedly encompasses both cognitive and conative attitudinal components, its most salient characteristic is its affective component. The scale content indicates that the affect dimension is a broad one and is not limited to a pro-con or hostile-friendly dimension, and that anxiety, annoyance, disgust, etc., enter into it. Nevertheless, it may be characterized in terms of a net favorable-unfavorable continuum. As such, this factor would be similar to most existing disability measures, like the ATDP, that appear to be tapping the net affect dimension (Siller & Chipman, 1964b). (See Chapter 7.)

Some of the factor's cognitive components, i.e., the perceptions, beliefs, expectations held in regard to these disabilities, revolve around the respondents' judgments of the disabled person's ability to master his environment. Others refer to meanness of character and emotional maladjustment as attributes of people with such handicaps. Conative components involve the rejection of intimate relations, e.g., in familial situations, as an accompanying "policy orientation" toward those with physical impairment.

Factor II – Authoritarian Virtuousness[12]—Scales 4A, 4B, and 4C were the ones with highest loadings on this factor; it carried 18% of the estimated common variance. Earlier discussions (see Authoritarian Virtuousness in Chapter 3) indicated that some kind of authoritarian constellation emerged during each of the successive stages of refinement of the DFS. It is not surprising, therefore, to find that this constellation factored out separately again. Its successive appearances lead to increasing confidence in its potency and validity. It is also worth noting that all three questionnaires are represented among its component scales.

While there is less similarity in item content, for obvious reasons, between Superficial Empathy (4C) and the two Authoritarian Virtuousness scales, the items of all three have a patronizing quality. A review of the descriptions of the three constituent scale factors will explicate the meaning of this "second-order" factor.

Factor III – Distressed Identification—The two scales with primary loadings on this factor were 6A and 6B, the Distressed Identification scales of the amputation and blindness questionnaires. This factor accounted for 12%

---

[12] In the text where first-order and "second-order" factors or scales might be confused, the former will be followed by a parenthesis containing the questionnaire initial and the scale number. For example, Authoritarian Virtuousness would refer the "second-order" factor while Authoritarian Virtuousness (4A) refers to the first-order amputation scale.

of the estimated common variance, and the discussions of the individual scales offered in the previous sections should be referred to. It is interesting to note that the three Interaction Strain scales (1A, 1B, and 1C) were the only other scales to have secondary loadings over .30 on this factor. The phenomenon of distressed identification appears to play a role in producing the difficulties connected with interacting with the disabled as measured by Interaction Strain.

Factor IV – Cosmetic Aversion– The four scales (1C, 2C, 5C, and 6C) with principal loadings on this factor all come from the DFS-C. This is the second most powerful factor from the standpoint of the number (four) of scales loading on it and the percentage (20) of estimated common variance for which it accounted. Three of the four scales have top-loading items personally aversive in nature, and the fourth (Interaction Strain) contains hostile and rejecting items as well, albeit with lesser loadings. Scales 1C and 2C have very high secondary loadings on the first factor (.50 and .61 respectively). Conversely, five of the eleven scales on Factor I have loadings of .30 or greater on this factor. Obviously, there is a highly complementary relationship between Factors I and IV with affect as a common theme. One could expect that if a third-order factoring were performed these two would coalesce.

Establishment of Quasi-Second-Order Factor Scales

The "second-order" factors were treated as scales by summing the scores on those individual scales loading highest on a particular factor. Summary statistics for the resulting four "super-scales" are entered in Table 17. Each combination of first-order scales provides some gain in internal consistency reliability over the individual scales of which it is made up (Tryon's variance form of the general formulae for the reliability coefficient; Tryon, 1957).

Table 18 contains a matrix of the product-moment correlation coefficients among the four super-scales, and it also indicates the reliabilities of difference scores between the scales.

Five of the six intercorrelations of these "second-order" scales result in coefficients of moderate size; the sixth, between Net Affect and Cosmetic Aversion, is greater. All have p-values well below .01. Since both the Net Affect and the Cosmetic Aversion scales have very high reliability coefficients, there still are substantial amounts of reliable specific, as well as common, variance remaining. Therefore these two super-scales could, with equal justification, be treated either separately or together depending upon the circumstances.

The magnitude of the coefficients of reliability of difference scores indicate that if used with discretion all four super-scales could provide useful information for profile analysis.

TABLE 17

Summary Statistics for Quasi-Second-Order Scales

(N = 233)

"Second-Order" Scale	Total No. of Items	Total No. of Scales	Scale Mean	SD	Range of r_{tt} --Individual Scales	"Second-Order" Scale r_{tt}	σ_m
Net Affect	170	11	758.63	87.13	.72 - .92	.98	12.32
Authoritarian Virtuousness	47	3	167.10	26.39	.62 - .88	.90	8.34
Distressed Identification	14	2	56.87	10.81	.80 - .81	.83	4.46
Cosmetic Aversion	55	4	218.65	32.54	.74 - .89	.93	8.61

Implications of the "Second-Order" Scales

For the researcher whose interest in estimating a group's attitude toward disability lies in higher levels of generalization, these "second-order" scales should prove highly useful. They are likely to have value in tapping over-all feelings not only toward the disability types directly referred to in the questionnaires, but also toward disability in general. Should research requirements dictate a finer degree of discrimination than the gross continua provided by these scale combinations, the separate use of the first-order scale scores would be appropriate.

Obviously, for some of the "second-order" factors, such as Net Affect, combined scores using fewer than all three questionnaires would be feasible. However, before variants of this kind are employed, it would be best to explore the properties of the entire set of questionnaires. From the results shown in Table 16, there would be justification for using the sums of the raw scores obtained on the relevant scales of the amputation or blindness questionnaires alone (following the procedure for super-scale I). The reliability of a simple summed score of those five scales on amputation which have their major loadings on Factor I was .96. The same reliability coefficient of .96 was found for the summed scores of the five scales of the blindness questionnaire which loaded on that factor. When the ten amputation and blindness scales on Factor I were combined summatively, the reliability coefficient was .98.

TABLE 18

Intercorrelations and Reliability of Difference Scores

among Quasi-Second-Order Scales

(N = 233)

"Second-Order" Scale	Net Affect	Authoritarian Virtuousness	Distressed Identification
Authoritarian Virtuousness	31 (91)		
Distressed Identification	46 (82)	40 (77)	
Cosmetic Aversion	77 (80)	34 (87)	43 (79)

Note. - All correlations are significant well beyond the .001 level. All decimal points have been omitted. Numbers in parentheses are reliability of differences scores.

Three Net Affect scores were computed using all 11 scales for one, the five on amputation for the second, and the five on blindness for the third. These were correlated with ATDP scores of 89 psychology and physical therapy undergraduates. The respective correlation coefficients were .54, .56, and .50. Net Affect Amputation correlated .83 with Net Affect Blindness. The part-whole correlations of Net Affect Amputation and Net Affect Blindness to the 11-scale Net Affect score were .95 and .96 respectively. A good degree of interchangeability seems possible.

Chapter 6

RELATIONSHIPS OF SCALE SCORES TO DEMOGRAPHIC VARIABLES

The basic reference groups (the Developmental Samples) from which the data were gathered consisted of the 483, 477, and 520 persons who responded to the amputation, blindness, and cosmetic conditions pre-scale questionnaires, respectively. Demographic data covering age, education, and sex were obtained from all of these subjects. Respondents to the amputation and blindness questionnaires also provided information on whether they had had much contact with that particular type of disabled person. Within each of the three Developmental Samples various subgroups were identified, and analyses of their scale scores are presented below and in previous sections of this report. Appendix B contains the means and standard deviations of each scale for these various groups.

An examination of the relationships of age, sex, education, and contact to scale scores was made by dividing the Developmental Sample for each questionnaire on the basis of sex and of age and education. This sorting provided the basis for a 2 x 3 analysis of variance where scale score cell entries were grouped by Sex and by Age-Education (age < 20, education ≤ 12 years; age ≥ 20, education ≤ 12 years; some college regardless of age). Contact had to be analyzed separately; thus its interaction with other variables could not be assessed. The results of these statistical tests are listed in Table 19. Estimated ω^2 values are entered so that for those comparisons which produced significant F-values the strength of association can be readily seen.

Sex Differences

Four of the amputation scales, five from blindness, and four of the cosmetic scales had F-values significant beyond the .05 level. Mean scores for females were higher on 12 of the 13 scales for which sex is a significant variable. The one exception was Superficial Empathy from DFS-C. However, examination of the estimated ω^2's indicates the triviality of the relationships between sex and scale scores. The degree of relationship is so small that separate sex norms are not warranted. (Also see Table 20.)

Age and Education

Table 19 shows that scores obtained on 16 of the 20 scales are significantly related to age and education. Inspection of Table 20 shows that education, more than age, is the primary contributor to these results.

Exceptions are Rejection of Intimacy on all three questionnaires and Imputed Functional Limitations on DFS-B where age correlates significantly while education does not. Those with no college education are invariably more aversively inclined, with the effect usually due to the contribution of the high school, rather than to the adult noncollege, group. The role of education is most pronounced on the two Authoritarian Virtuousness scales.

Interaction of Sex and Age-Education

The four interactions which had significant *F*-values were all trivial, according to their estimated ω^2's.

Contact

Eleven of the fourteen comparisons were statistically significant. But again, the strength of association was low, although for all, those with more contact obtained more favorable scores.

DEMOGRAPHIC VARIABLES AS PREDICTORS OF SCALE SCORES

The contributions of the demographic variables to the variance of the scale scores was more directly examined by treating them as independent variables. The four variables associated with DFS-A and DFS-B and the three relevant to DFS-C were combined in multiple prediction equations, and R's were obtained with each factor scale as the dependent (predicted) variable. Table 20 presents the zero-order product-moment and multiple correlations for each scale.

The zero-order correlations confirm the conclusions drawn from the prior analysis of the estimated ω^2 values. No substantial relationships between scale scores and demographic data are to be found in this study, barring those of the previously mentioned Authoritarian Virtuousness scales (4A and 4B). These scales yielded zero-order correlations with education of .51 and .48.

In general, the demographic variables do not seem to be of any substantial further import when their joint effects are assessed in the form of multiple R's with each scale. In the instance of the two Authoritarian Virtuousness scales, using all of the demographic variables leaves the multiple R's unchanged (.51 and .48 respectively) from the zero-order correlation with education alone. These coefficients mean that education accounts for 26% and 23% of the variances of scales 4A and 4B respectively. So far as the remaining scales are concerned, the next highest R's are associated with scales 1A, 3B, and 6B; in each case the value of R is .39, meaning that only 15.2% of the variance of the scale scores is accounted for by the demographic variables.

In all, these findings indicate that there is no need to develop separate norms based on the demographic variables used in this study.

TABLE 19

Estimated ω^2 Values Associated with Significant $\underline{F}$ Values

Derived from Analysis of Variance of Scale Scores by Demographic Variables

Scale	Sex	Age and Education[a]	Sex x Age & Education	Contact
	Demographic Variable			
Amputation (N=483)				
1A Interaction Strain	.02(**)[b]	.03(**)		.05(**)
2A Rejection of Intimacy	.02(**)	.01(*)		.04(**)
3A Generalized Rejection	.02(**)	.05(**)	.02(**)	.01(**)
4A Authoritarian Virtuousness		.14(**)		
5A Inferred Emotional Consequences				.01(*)
6A Distressed Identification		.06(**)		
7A Imputed Functional Limitations	.03(**)			.02(**)

	Blindness (N=477)					
1B	Interaction Strain	.06(**)	.01(*)	.01(*)		.03(**)
2B	Rejection of Intimacy	.01(*)	.02(**)			.06(**)
3B	Generalized Rejection	.04(**)	.07(**)	.01(*)		.02(**)
4B	Authoritarian Virtuousness		.16(**)			
5B	Inferred Emotional Consequences	.04(**)				.01(*)
6B	Distressed Identification		.09(**)			.04(**)
7B	Imputed Functional Limitations	.04(**)	.03(**)			.05(**)
	Cosmetic Conditions (N=520)					
1C	Interaction Strain	.01(*)	.01(**)	.01(*)		
2C	Rejection of Intimacy	.03(**)	.08(**)			
3C	Reluctant Aversion	.02(**)	.07(**)			
4C	Superficial Empathy	.01(*)	.04(**)			
5C	Qualified Aversion					
6C	Proximate Offensiveness		.09(**)			

---

[a] The population was divided into the following three groups: Age < 20 and education ≤ 12 years; age ≥ 20 and education ≤ 12 years; and education > 12 years.

[b] Numbers are ω^2 values; (*) indicates F value $p < .05$, (**) indicates F value $p < .01$.

TABLE 20

Zero Order and Multiple Correlations of Demographic Data with Disability Factor Scales

		Predictor Variable				
	Dependent Variable	Age	Education	Sex[a]	Contact	R
	Amputation (N = 483)					
1A	Interaction Strain	15**	18**	18**	20**	39**
2A	Rejection of Intimacy	-12**	06	20**	19**	33**
3A	Generalized Rejection	03	26**	21**	08	37**
4A	Authoritarian Virtuousness	05	51**	-01	-08	51**
5A	Inferred Emotional Consequences	-08	06	10*	08	17**
6A	Distressed Identification	24**	24**	-01	00	33**
7A	Imputed Functional Limitations	-08	07	23**	12**	30**
	Blindness (N = 477)					
1B	Interaction Strain	08	14**	27**	15**	36**
2B	Rejection of Intimacy	-15**	07	12**	22**	31**
3B	Generalized Rejection	-11*	27**	22**	12**	39**
4B	Authoritarian Virtuousness	04	48**	-10*	-04	48**
5B	Inferred Emotional Consequences	-05	08	22**	09*	25**
6B	Distressed Identification	22**	25**	02	18**	39**
7B	Imputed Functional Limitations	-17**	-01	19**	23**	34**
	Cosmetic Conditions (N = 520)					
1C	Interaction Strain	02	15**	12**		20**
2C	Rejection of Intimacy	-33**	01	21**		38**
3C	Reluctant Aversion	-03	33**	13**		37**
4C	Superficial Empathy	04	26**	-12**		28**
5C	Qualified Aversion	-04	-02	07		08
6C	Proximate Offensiveness	-19**	25**	-10*		33**

Note. - All decimal points have been omitted.

*p < .05.

**p < .01.

[a] For sex, male = 1, female = 2.

Chapter 7

THEORETICAL IMPLICATIONS

The preceding chapters have been devoted to a presentation of the procedures involved in developing the Disability Factor Scales and to a discussion of the psychometric characteristics of these instruments. However, the process of producing these scales has also shed considerable light on several important theoretical issues regarding the properties and the structure of the whole domain of attitudes toward disability. Five of these issues were listed in Chapter 1, and some relevant findings will be discussed here briefly.

THE NATURE OF THE COMPONENTS OF ATTITUDES TOWARD SPECIFIC DISABILITIES

Findings relevant to this problem emerged from the factor analyses of items. The derivation of seven amputee, seven blindness, and six cosmetic conditions factors of good stability indicates that a multidimensional, rather than unidimensional, space is involved. The nature of each obtained dimension has been indicated, and although the specific name given to each factor may be modified in the light of further information, psychologically important categories have been identified. The self-report nature of the stimulus material sharply limits the extent to which dimensions involving more unconscious processes could be represented. Thus, it would be difficult in such an instrument to elicit shame, mortification and guilt, which have been identified in interviews (Siller et al., 1967). Nevertheless, the Distressed Identification factors clearly imply aspects of castration anxiety, while the operation of still other dynamically determined processes is readily suggested by other factors. We believe that the major salient dimensions of attitudes in this area have been identified for those working within the self-report framework. The inclusiveness of the DFS dimensions can readily be tested by means of a multiple regression equation in which the various factor scales are used jointly to predict any index of attitude toward disability.

The immediate conclusion from the three DFS questionnaires is that a unidimensional measure in this area will describe only part of the attitudinal domain. If a unidimensional measure is desired the discussion of the Net Affect factor in the preceding chapter and that below on "The Relationships among Attitudinal Components" should be reviewed.

THE GENERALITY OF ATTITUDINAL COMPONENTS ACROSS DISABILITIES

The principal data on this point was reflected in Table 14 which shows that it was possible to match all seven scales on amputation with those of blindness, and with two of the cosmetic scales. Two other scales on the DFS-C were found to be analogous to scales on the other questionnaires. The two remaining dimensions of the cosmetic questionnaire, Qualified Aversion and Proximate Offensiveness, reflected aspects of cosmesis without functional implications. The items dealing with functional conditions that were included in the early item pool as orienting variables were completely absent from the factors which evolved.

It appears, therefore, that while there are components of attitude which cut across disability types, others are unique to a specific kind of impairment. Even for those scales that cut across disabilities, there is reliable variance which is specific to the condition reflected in the particular questionnaire.

The data give support to conceptualization of the attitude domain as having widely general as well as important disability-specific dimensions.

THE RELATIONSHIPS AMONG ATTITUDINAL COMPONENTS

The quasi-second-order factors provide a sound basis for conceptualizing the relationships among the scales in hierarchical terms. The four-way division of the 20 factor scales into Net Affect, Authoritarian Virtuousness, Distressed Identification and Cosmetic Aversion "second-order" factors reflects an underlying organization which efficiently summarizes the distribution of the common variance of the first-order scales. Although the Net Affect and Cosmetic Aversion "second-order" scales undoubtedly could be collapsed into one "third-order" factor, the Distressed Identification and Authoritarian Virtuousness super-scales do not lend themselves to further reduction.

As indicated above (Chapter 5), the hierarchical organization of scales permits a flexible utilization of the DFS; the use of either first-order or "second-order" measures can be determined by the needs of a particular study.

It is our belief that most existing scales in the disability domain are diffuse and unreliable measures of the net affect dimension. A test of this assertion was made with a group of 89 persons (physical therapy and psychology undergraduates) who took the three DFS questionnaires as well as the ATDP. The correlations between first-order scales of the DFS and the ATDP indicated that significant correlations resulted only with those scales belonging to either the Net Affect or Cosmetic Aversion "second-order" factors. Correlating the ATDP with the four second-order factor scales resulted in the following coefficients: Net Affect r = .54, Authoritarian Virtuousness r

= -.12, Distressed Identification r = .11, and Cosmetic Aversion r = .34. Computation of multiple R's, using the four "second-order" scales as predictors of ATDP scores, resulted in a coefficient of .60 which is not much higher (although $p < .05$) than the .54 correlation between the ATDP and Net Affect alone. In size, the correlations are precisely in line with the expectations that the Authoritarian Virtuousness and Distressed Identification scales would be relatively independent of the ATDP and that the Net Affect and Cosmetic Aversion scales would correlate moderately with it. The ATDP might then be characterized as drawing its major reliable variance from the affect dimension. The DFS has an advantage over the ATDP even as a measure of disability-related affect as it provides greater specificity through the separate first-order factor scales and uniformly higher reliabilities of both the first- and "second-order" scales.

THE CONSISTENCY OF ATTITUDES OF INDIVIDUALS WITHIN AND ACROSS DISABILITY TYPES

The Repeat Group of 233 persons who took all three questionnaires provided information on this question. Inspection of Table 13 shows that with rare exceptions, the intercorrelations of scale scores are significant well beyond the .01 level. Thus, not only is a person whos is favorable along one dimension of attitude within a questionnaire likely to be favorable on other dimensions, but a similar trend is present even on the scales of the other questionnaires. To a considerable extent, this relationship is highest on the identical or analogous scales (see Tables 13 and 15). That is, despite the tendency of scales within a disability type to correlate most highly with one another, for this sample the basic dimensions of attitudes across disability types serve as the more potent forces. For example, the Interaction Strain scales of the three questionnaires intercorrelated more highly with each other than they did with others within their respective questionnaires.

Whiteman and Lukoff (1962) found that a fair prediction could be made from one attitudinal component regarding "physical handicap" to the *same* attitudinal component regarding "blindness." On the other hand, in contrast to our data, they also found " . . . if one attempts to predict from an attitudinal component regarding physical handicap to a *different* attitudinal component dealing with blindness, prediction falters." Whiteman and Lukoff, again unlike us, found that the relationship *between* components, even though within a given disability (blindness or physical handicap), is poor.

The discrepancies between the two studies might be accounted for in several ways. Whiteman and Lukoff used various kinds of item format from which indices measuring the attitudinal components were derived. A number of the comparisons apparently were based on single items, thereby limiting the reliability of the data. The present study, anticipating the possibility of instrument factors influencing the results, adhered to a single type of item format. Some of the lack of relationship between components in the Whiteman and Lukoff study might therefore be due to instrument specificity and lower reliability of their measures. The use of one item format in our study might have had the effect of maximizing whatever relationships did exist.

Another avenue of reconciliation of differences between the two studies is offered by the results of the quasi-second-order factor analysis. The extent of relationship between components of attitude might be determined by whether or not components within one of the "second-order" factors were being compared.

Since the present data are based upon a larger and more varied initial sample and the scales are of higher reliability, it would seem that the findings of this study better reflect the actual relationships among and between attitudinal components than do those of Whiteman and Lukoff.

THE ROLE OF DEMOGRAPHIC VARIABLES IN DETERMINING REACTIONS TO DISABLED PERSONS

Analyses of the influence of demographic variables upon scale scores were presented in Chapters 4 and 6. The relations of the scale scores to sex, age, education, and contact with the disabled were examined singly and in several combinations. Despite certain exceptions (such as the association between educational level and Authoritarian Virtuousness on both the amputation and blindness questionnaires as shown in Table 20), the lack of appreciable relationship between scale scores and these demographic factors is noteworthy. In fact, when the demographic variables were combined in a multiple regression equation, the resulting multiple R's with scale scores were far from impressive.

It is important to note that although contact with the disabled, sex of the respondent and the like are often reported as significant variables in this area, the strength of the relationship usually is not made explicit. The present study and previous ones (Siller & Chipman, 1964b; Siller et al., 1967) clearly demonstrate that although a *difference* in attitude strength may be statistically significant (by t- or *F*-tests) the accompanying correlation or strength of association is frequently found to be trivial. There are some investigators who have, however, obtained results which do indicate the relevance of certain demographic variables to the disability domain. As one example, Richardson and his associates have gathered considerable data on "preference-rankings" of pictures depicting various kinds of disabilities from subjects of different backgrounds. While strong cultural uniformities were obtained employing the usual demographic variables (Richardson et al., 1961), certain highly specific cultural subgroups did show ranking patterns different from those of the general population (Goodman et al., 1963). It is quite possible that such selective ethnically-related variables or occupational choice, etc., might influence scores on the DFS in ways that need to be studied in the future.

With regard to the consistency of the correlational structure of the DFS across groups, the pattern of relationships among scales appears to be quite stable. Two matrices of correlation coefficients of scale scores for two quite disparate groups of repondents, the high school and the physical therapy students, were compared. Although these two groups are quite discrepant in terms of their mean scores, and although there are many clear demographic differences (age, sex ratio, educational status, involvement with the disabled, racial and socioeconomic composition, etc.), the values of parallel correlation coefficients are more remarkable for their similarity than for their differences.

To conclude, only education, among the demographic variables examined in the present undertaking, appears to have any consistent relationship to scale scores; and even this is limited in extent and degree.

Chapter 8

SUMMARY AND IMPLICATIONS

Summary

Purpose

The purpose of this study was to describe salient dimensions of attitudes toward the physically disabled and to develop a set of instruments to measure these dimensions. The planned multidimensional set of scales was intended to have the requisite reliability and sensitivity to permit accurate measurement of experimental effects.

Particular issues of theoretical interest were examined: (1) the nature of the components of attitudes toward specific disabilities; (2) the generality of attitudinal components across disabilities; (3) the relationships among components; (4) the consistency of attitudes of individuals across disabilities; and (5) the role of demographic variables in reactions to the disabled.

Methodology

The factor-analytic technique of scale construction was chosen as the primary method throughout the study. Using this procedure, it is possible to derive highly reliable scales with a minimum of items. Furthermore, it provides a direct answer to the question of dimensionality of attitude structure in a given area, and the nature of the component attitudes is suggested by interpretation of the resulting factors.

The disability universe was sampled by selection of three disability types – amputation, blindness, and cosmetic conditions – representing key positions on two pertinent continua: functional and cosmetic impairment. A questionnaire for each disability type was developed.

Preliminary Stage–Three separate groups responded to one of three large pools of items tapping attitudes toward the three disability conditions and certain nondisability areas (e.g., Authoritarianism, Personal Health). Their answers were factor-analyzed, the factors rotated to an orthogonal structure, and the total number of items reduced by eliminating the lowest loading ones.

Final Developmental Samples (Amputation, N=483; Blindness N=477; Cosmetic Conditions, N=520)–Each of three new groups of subjects of diverse demographic characteristics was given one of the three revised and reduced questionnaires. Among these samples there were 233 subjects who responded to all three disability questionnaires. The returns were factor-analyzed for a final time and scales were derived from the resulting factors through elaborate psychometric procedures. The resulting Disability Factor Scales questionnaires (DFS) contain seven scales for amputation (DFS-A), seven for blindness (DFS-B), and six for cosmetic conditions (DFS-C). These Likert-type items are objectively scored, and expressed in language comprehensible at an eighth-grade level of education.

FINDINGS

Dimensions of Attitudes

It is evident that the disability attitude domain is multidimensional in nature. Unidimensional approaches can at best describe only limited aspects of reactions in this area, the most potent being an affective dimension of pleasantness-unpleasantness. The seven factors which emerged from the amputation and blindness analyses are virtually identical. The cosmetic conditions item set contains two factors which are identical with two from amputation and blindness, two which are analogous, and two which are unique dimensions. A brief description of each factor follows. The disability types for which they were identified appear in parentheses.

Interaction Strain (Amputation, Blindness, Cosmetic Conditions)–The predominant tone of this factor is one of distinct uneasiness in the presence of a disabled or disfigured person in a wide variety of social situations. Uncertainty about how to deal with the disabled, fear of saying or doing the wrong thing, and concern about social embarrassment are reflected. A second important theme refers to the arousal of disgust or revulsion. An hypothesis is offered relating the experience of emotional aversion to the general feeling of tension and constraint in interaction.

Rejection of Intimacy (Amputation, Blindness, Cosmetic Conditions)–The dominant theme of this factor is the rejection of close, particularly familial, relationships with the disabled or cosmetically impaired. An unwillingness to date, fall in love with, or marry such an individual is expressed in the item content, and the idea of having an impaired child is strongly rejected. Marriage to a disabled individual is often seen as limiting the formation of new friendships and they are frequently characterized as great burdens on their families.

Generalized Rejection (Amputation, Blindness)–Expressing a generalized negative orientation, this factor contains derogatory descriptions of the disabled, unpleasant personal reactions, and policy items advocating unfavorable treatment. Disturbance in empathic relations is emphasized, and reluctance to interact in intimate or formal situations is clear. Segregation is specifically advocated.

Reluctant Aversion (Cosmetic Conditions only)–This factor, although titled differently, is analogous to the Generalized Rejection factors of Amputation and Blindness. Aversion is expressed, and segregation desired. However, disruption of empathy is not included, and an "apology" for the aversive reaction is notable.

Authoritarian Virtuousness (Amputation, Blindness)–This factor is comprised of both authoritarian and ostensibly "pro-disabled" items. The disability items describe the handicapped person as having special gifts and desirable personal traits, advocate a general policy of favorable treatment and tolerance, and picture the respondent himself as especially warm and sympathetic toward the disabled. While the items are superficially positive in tone, it is likely that advocacy of "tolerance" in this context carries the imputation of inferior status.

An hypothesis accounting for the high loading of several authoritarian items on this ostensibly favorable factor is offered.

Superficial Empathy (Cosmetic Conditions only)–This factor is considered analogous to Authoritarian Virtuousness in that cosmetically impaired individuals are endowed with special characteristics, a number of which are positive. A general positive orientation of the respondent appears, and empathy, or desire for empathy, is expressed. However, unlike the Authoritarian Virtuousness factors, some negative traits are imputed as well.

Inferred Emotional Consequences (Amputation, Blindness)–The item content in this factor consists almost entirely of intensely hostile statements referring to the disabled person's character and emotions. Maladjustment and ill-temper are seen as frequent consequences with self-consciousness, irritability, and hypersensitivity generally attributed to amputees or the blind. Bitterness and self-pity are also inferred.

Distressed Identification (Amputation, Blindness)–This factor involves highly personalized reactions to disability. The emphasis is on the disabled person as a stimulus which activates anxiety about one's own vulnerability. An element of active identification is implied as well. An hypothesis concerning the relationship of Distressed Identification to castration anxiety is offered.

Imputed Functional Limitations (Amputation, Blindess)–This factor focuses quite specifically on the ability of the disabled person to function in his environment. The amputation factor stresses over-all functional limitations, physical dependency and restricted earning capacity. The blindness factor, although it contains such general items, specifically depicts the blind as unable to be a good lawyer, doctor, etc. Thus, while the imputation of functional limitations is common to both, there seems to be a more sharply defined image of the blind.

Qualified Aversion (Cosmetic Conditions only)–This factor does not correspond to any identified for Amputation and Blindess. Qualified expression of emotional aversion is the distinguishing quality of the item content. The types of cosmetic impairment included are generally of the variety assumed to be controllable.

Proximate Offensiveness (Cosmetic Conditions only)–This factor, like the one described immediately above, contains items tapping reactions of disgust about close physical contact. Similarly, the types of cosmetic conditions are judged to be controllable. In this factor, however, there is an associated sense of moral indignation and an attribution of stigma to the cosmetically impaired.

The Disability Factor Scales–Amputation, Blindness, Cosmetic Conditions (DFS-A, B, and C)

The scales were derived, as described above, from the 20 factors and are interpreted as measures of these basic dimensions. The DFS-A has seven scales totalling 101 items, DFS-B, the same seven totalling 105 items, and DFS-C, six scales totalling 80 items. The reliabilities of these first-order scales are generally high. The internal consistency reliability coefficients for DFS-A ranged from .80 to .92; for DFS-B, from .80 to .91; and for DFS-C, from .62 to .89. Test-retest reliability for the scales in all three questionnaires was more than sufficient. Major validational support at present is of the construct type. Factor validities are satisfactory, the lowest of the 20 scales being .66, the highest .93. There is evidence from a number of sources that the factorial results are descriptive of the attitude domain. The direction and magnitude of the relationship of the DFS scores to demographic variables is consistent with previous findings with other disability-attitude measures. Additional construct validation is to be found in the correlations between DFS and the ATDP which, as expected, were virtually all moderate and positive. Furthermore, a large number of tests which theoretically should have no relationship to disability attitude in fact proved uncorrelated with the DFS. Some concurrent validity was established for the DFS by showing that it significantly differentiated 93 physical therapy students from the more heterogeneous developmental samples on 17 of the 20 scales.

Relationships Among Scales

Although orthogonal factor-analytic procedures were used in developing the DFS, the resulting scales are for several reasons not completely independent statistically. The generally moderate intercorrelations indicate that both common and scale-specific variance are present. The intercorrelations of the scales within questionnaires range from .03 to .71 (based on N's of approximately 500). The lowest coefficients are associated with the Distressed Identification, Authoritarian Virtuousness, and Superficial Empathy scales which are thus shown to be relatively independent from the other scales. The intercorrelations among all 20 scales corroborated the pattern of relationships indicated by the content of the factors: DFS-A and B contain seven parallel scales, and DFS-C has two parallel, two analogous, and two specific dimensions. Where attitude components show consistency across disabilities (and thus where it is possible to measure individual standings on identical or analogous scales), the tendency is to respond in consistent ways toward different conditions. Thus, not only is the component structure comparable, but individuals who have the more favorable attitudes toward one type of disability also tend to have more favorable attitudes toward other types.

Quasi-Second-Order Analyses

A factor analysis of the intercorrelations among the 20 scales led to the identification of four "second-order" factors which most satisfactorily accounted for the common variance of the scales. Factor I, Net Affect, contained primary loadings of 11 of the 20 scales, and accounted for 50% of the estimated common variance. It appears to reflect a dimension of favorable-unfavorable response involving primarily emotional, but also some cognitive and conative, components and it seems to be the psychological factor which is tapped by other scales (e.g., ATDP) used in this area.

Factor II, Authoritarian Virtuousness, contains primary loadings of the two Authoritarian Virtuousness scales of DFS-A and B and of their analogue on DFS-C, Superficial Empathy. As with the three scales themselves, this factor reflects an admixture of positive orientation with a patronizing superiority.

Factor III is called Distressed Identification and consists of the two same-named scales from DFS-A and B. Its appearance reflects the consistency previously noted between these scales and testifies to the independent significance of this disability component.

Factor IV, labelled Cosmetic Aversion, contains the four remaining scales of the DFS-C which tap hostile, negative, rejecting attitudes very much like those involved in Factor I. It seems likely that it is the nature of the types of disabilities being reacted to that accounts for the separation of Factor IV from Factor I, and that they obviously would merge in a third-order factoring.

"Second-order" scales (super-ordinate scales) composed of those first-order scales which factored together were examined for their psychometric characteristics. Reliabilities ranging from .83 to .98 were generated, suggesting that such super-ordinate scales could prove useful.

The contributions of the four demographic variables to the variance of the DFS-A and B scale scores, and the contribution of the three demographic variables to the scale scores of the cosmetic questionnaire, were assessed via multiple regression, analysis of variance and estimated ω^2. Many of the scales did differentiate between demographic categories in the expected direction. Females and those with more contact tended to be relatively favorable, and subcollege groups–particularly high school students–tended to be more aversive. However, the strengths of these relationships were almost invariably trivial. Nor were the demographic variables of any further import when their effects were assessed jointly in the form of multiple R's with each scale. In all, these data militate against the development of specialized norms based upon the demographic variables used in this study. However, comparative studies of restricted groups, e.g., personnel in the health professions, are likely to generate separate norms.

IMPLICATIONS

The major implications stem from the identification of salient dimensions of attitude toward the disabled and the development of scales to measure these dimensions.

Use of the Disability Factor Scales

The essential function of the DFS is to serve as measures of the basic set of components of attitudes obtained in this study. Experimenters can use these scales to make finer, more reliable and psychologically more meaningful discriminations than have been possible with instruments thus far available. When research requirements allow for something less than the fine discriminations afforded by the separate use of the first-order scales, "second-order" combinations are appropriate. The superordinate scales are also likely to have value in tapping over-all feelings toward disabilities in general. The high reliability of the individual scales and the variety of useful combinations of these scales provide the user with a valuable flexibility. The broad theoretical framework which guided the development of the DFS facilitates its use for the exploration of important theoretical issues, not only within the domain of disability, but in other areas as well.

Subsequent work elucidating the meanings and correlates of the various factor scales is necessary. In the process of validating the scales the constructs underlying the DFS will become clearer, and a network of meaning can be developed so that attitudes toward the disabled can be integrated with such constructs as self-concept, prejudice, and the like.

The evidence for consistent relationships between personality structure and response to persons with afflictions is weak but persistent. The feebleness of the obtained correspondences has been due, in part at least, to the limitations of previous disability attitude measures. Studies of this nature are likely to be more fruitful when the DFS is employed because of its advantages over older instruments. Consequently, efforts should be renewed to detail the various aspects of interdependence between these two classes of data (e.g., between guilt and Reluctant Aversion, or self-concern and Rejection of Intimacy).

In addition, since component attitudes have been identified and described, it becomes possible to trace the genesis or development of these components over time. Such studies could form the basis for broader studies of the development of values and beliefs, which would assist in efforts to modify and improve attitudes held toward the disabled.

Users of the DFS are cautioned against employing the instruments for purposes other than research. The scales should not be used for clinical or selection procedures until specific studies of validity have been conducted. Ultimately, one might expect that the DFS will be of value as a screening or selection tool. For example, a person with strong feelings of "Proximate Offensiveness" may be found not to work well with persons with cosmetic conditions, but he may be more successful with mental retardates, the brain damaged, or those without apparent responsibility for their state.

The advantages of determining the distinctive characteristics of specialized groups, such as health personnel or teachers, are obvious. Comparisons can be made between the responses to the DFS of "effective" vs. "ineffective" personnel, or between student groups of physical therapists and nurses and groups of experienced, effective workers. Longitudinal studies could be conducted which would follow trainees from the inception to the completion of training and, then, into actual work experience; and relationships to ultimate level of job success could be determined.

The DFS can also be used to evaluate short-term change of attitudes. Each questionnaire has been constructed so that the first and second halves constitute parallel forms of the test. Although the statistical properties of these halves are still to be determined, the potential for the use of the DFS to study attitude-change is present.

Extension of the use of the DFS to measure attitudes of the disabled toward themselves would be desirable. Comparisons between the handicapped and the nonhandicapped in terms of mean scale scores, profiles, and factorial structure of the components are recommended. It also would be of interest to compare the attitudes of the handicapped toward their own and toward other disability types.

Attitudes toward additional types of affliction could readily be investigated by substituting disability referents not as yet covered by the present DFS. The data indicate that "proved" item stems are likely to be interchangeable for other conditions such as deafness, etc. Thus, the DFS can serve as a source of item stems, the originals of which have been consistently identified with stable components.

Another extension of the DFS could be to establish a General Form (DFS-G). The *one* questionnaire would contain items alluding to different conditions, thus leading to measures of components of attitudes toward disability in general, but based on reactions to specific disabilities rather than to the generic term "disability." Until a DFS-G is developed, research workers may well consider using the A, B, and C forms or particular scales as estimates of general attitudes.

Although initial data indicate factorial invariance of the DFS over populations, more extensive data in this respect need to be obtained for larger and more varied, as well as more specialized, groups.

Structure of Attitudes

1. The use of multidimensional measures in this area is strongly recommended since unidimensional approaches describe only limited aspects of reactions, probably an affective dimension of pleasantness-unpleasantness. Additional aspects, such as fear of consequences of association, imputation of functional, emotional and characterological qualities, and distressed affect through identification, must be considered as well.

2. The recurrence of many attitude components across a number of disabilities suggests that a limited set of dimensions can describe much of the attitude domain for a host of disabilities. The set of dimensions obtained in the present study can serve as an initial taxonomy. Research in other areas of disability might fruitfully use these dimensions as a starting point, since it is likely that at least some of them will be applicable.

3. Certain components seem to be relevant to one or a small number of disabilities but can be very important for these. For most thorough understanding and best prediction, disability-specific scales are recommended.

4. Certain attitudinal components, e.g., Inferred Emotional Consequences, emerge as aspects of reactions to such dissimilar conditions as amputation and blindness, but are not relevant to cosmetic impairment. This suggests that categorization of disabilities on the basis of public conceptions and reactions would differ from the usual functional-oriented groupings. Thus, a classification of disabilities in terms of those aspects which are really salient to the public is recommended and would be particularly useful in formulating programs concerned with modification of attitudes.

5. Some components, namely those on the interpersonal level, are, in all likelihood, more susceptible to modification than are others which are more intrapsychically determined. Experimental efforts directed toward identifying those components most readily modifiable is recommended.

6. The finding that there tends to be a consistency in an individual's attitudes across disabilities suggests the following hypothesis: modification of attitudinal components for one disability may induce similar changes in attitude toward other disabilities.

7. The psychological dimensions and associated scales can be applied with confidence to populations that differ on a variety of demographic characteristics such as sex, age, and education. Preliminary data indicate that the factor structure is the same regardless of these demographic distinctions, and that the *types* of attitudes found in various segments of the population will be essentially the same, although intensity of attitudes may vary among certain special groups.

8. Our data suggest that more aversive reactions are common among adolescents. The affective saliency of disability to them should make them a choice group for study. The particular strength of their distressed feelings raises interesting developmental questions as well (e.g., the relationships among puberty-libido, increasing social awareness, concomitant insecurity, and negative affect).

9. Various issues regarding the dynamic properties of the factor scales remain for future elaboration and verification. In the case of Interaction Strain it would be worthwhile determining whether the stresses subjects experience lead to aversion (as they seem to indicate), or whether (as we suspect) the aversion is the more basic response, while the strain represents a rationalization of these feelings of revulsion. Another challenging question concerns the possibility that rejecting amputation, blindness, etc., in those with whom one is most closely identified (as with Rejection of Intimacy) really represents a rejection of such conditions in one's self. The relationship of castration anxiety, and/or general anxiety to the Distressed Identification scales, is an important task for future demonstration. It would also be valuable to be able to reconcile the apparent favorableness of items in Authoritarian Virtuousness and Superficial Empathy with the positive correlations of these scales with other aversive scales.

10. Inferred personal responsibility seems to be an important mediating variable in the dynamics of disability attitude. Thus, for example, very authoritarian persons are likely to be highly punitive or exaggeratedly benevolent, depending on whether or not they perceive the victim to have personal responsibility for his condition. Investigation of this hypothesis can be undertaken using the Authoritarian Virtuousness (DFS-A, B) scales, and the Superficial Empathy scale (C) as attitude measures. The Proximate Offensiveness and Qualified Aversion scales, both of which tap reactions of disgust and of belief that certain disabilities are subject to personal control, also lend themselves to research in this area.

11. Information about the components of attitude should be utilized for constructing a curriculum for a workshop designed to familiarize counselors, therapists, nurses, and other health-related professionals with the various ways in which the nondisabled react to the disabled, and with how these reactions might effectively be handled. These professionals could then apply the findings in direct work with the disabled. Such a curriculum could either be the basis of a work shop itself or part of a larger program of "Human Relations" or "Interaction Training."

12. Rehabilitation personnel need to be alerted to the strong tendency for persons to use supposed functional limitations of the handicapped as camouflage for feelings of strong aversion.

13. The handicapped are often recipients of untoward personal evaluations in a manner similar to the stereotyping of other stigmatized groups. Techniques to handle this situation should be developed.

REFERENCES

Arnholter, Ethelwyne G. Attitudes toward the disabled. *American Psychologist*, 1962, 17, 338. (Abstract)

Bell, A. H. Attitudes of selected rehabilitation workers and other hospital employees toward the physically disabled. *Psychological Reports*, 1962, 10, 183-186.

Canfield, A. A. The "Sten" scale–a modified C-scale. *Educational and Psychological Measurement*, 1951, 11, 295-297.

Chesler, M. A. Ethnocentrism and attitudes toward the physically disabled. *Journal of Personality and Social Psychology*, 1965, 2(6), 877-882.

Cohen, J., & Struening, E. L. Opinions about mental illness in the personnel of two large mental hospitals. *Journal of Abnormal and Social Psychology*, 1962, 64, 349-360.

Cowen, E.L., Underberg, Rita P., & Verillo, R. T. The development and testing of an attitudes to blindness scale. *Journal of Social Psychology*, 1958, 48, 297-304.

Davis, F. Deviance disavowal: The management of strained interaction by the visibly handicapped. *Social Problems*, 1961, 9, 121-132.

Fitting, E. A. *Evaluation of adjustment to blindness*. New York: American Foundation for the Blind, 1954.

Genskow, J. K., & Maglione, F. D. Familiarity, dogmatism, and reported student attitudes toward the disabled. *Journal of Social Psychology*, 1965, 67, 329-341.

Goffman, E. Stigma: *Notes on the management of spoiled identity*. Englewood Cliffs, N. J.: Prentice-Hall,, 1963.

Goodman, N., Dornbusch, S. M., Richardson, S. A., & Hastrof, A. H. Varient reactions to physical disabilities. *American Sociological Review*, 1963, 28(3), 419-435.

Gulliksen, H. *Theory of mental tests.* New York: John Wiley & Sons, 1950.

Hays, W. L. *Statistics for psychologists*. New York: Holt, Rinehart & Winston, 1963.

Jabin, Norma. Attitudes toward the physically disabled as related to selected personality variables. Unpublished doctoral dissertation, New York University, 1965.

Kaiser, H. F. The varimax criterion for analytic rotation in factor analysis. *Psychometrika*, 1958, 23, 187-200.

Meyerson, L. (Ed.). *Journal of Social Issues,* 1948, 4, 4.

Nunnally, J. *Psychometric Theory*. New York: McGraw-Hill, 1967.

Richardson, S. A., Goodman, N., Hastrof, A. H., & Dornbusch, S. M. Cultural uniformity in reaction to physical disabilities. *American Sociological Review*, 1961, 26, 241-247.

Siller, J. Reactions to physical disability by the disabled and the nondisabled. *American Psychologist*, 1959, 14, 351. (Abstract) Also reprinted in: *Research Bulletin*, 1964, No. 7, 27-36. American Foundation for the Blind.

Siller, J. Personality determinants of reaction to the physically handicapped. *American Psychologist*, 1962, 17, 338. (Abstract) Also reprinted in: Research Bulletin, 1964, No. 7, 37-52. American Foundation for the Blind.

Siller, J. Toward factorial indices of reactions to the disabled. Proposal submitted to the Vocational Rehabilitation Administration, February, 1963. (a)

Siller, J. Reaction to physical disability. *Rehabilitation Counseling Bulletin*, 1963, 7(1), 12-16. (b)

Siller, J. Ego factors in reaction to the physically disabled. In C. Esco Obermann (Ed.). *Proceedings of the 12th Annual Work Shop of the Association of Rehabilitation Centers, Chicago, December, 1963.* Washington, D. C.: U. S. Vocational Rehabilitation Administration, 1965, 15-17. (a)

Siller, J. Toward factorial indices of reactions to the disabled. Progress Report submitted to the Association for the Aid of Crippled Children, March, 1965. (b)

Siller, J. Conceptual and methodological issues in the study of attitudes toward disability. Paper presented at the American Personnel and Guidance Association Annual Convention, April, 1966. (a)

Siller, J. Components of attitudes toward the disabled: Theory and experimental schema. *American Psychologist*, 1966, 21, 616. (Abstract) (b).

Siller, J., & Chipman, A. Response set paralysis: Implications for measurement and control. *Journal of Consulting Psychology, 1963, 27, 432-438.*

Siller, J., & Chipman, A. Perceptions of physical disability by the nondisabled. *American Psychologist*, 1964, 19, 564. (Abstract) (a).

Siller, J., & Chipman, A. Factorial structure and correlates of the Attitudes Toward Disabled Persons Scale. *Educational and Psychological Measurement*, 1964, 24(4), 831-840. (b).

Siller, J., Chipman, A., Ferguson, L., & Vann, D. H. Attitudes of the nondisabled toward the physically disabled. *Studies in Reactions to Disability: XI*. New York University, May, 1967.

Steingisser, Edith. The influence of set upon attitudes toward the blind as related to self-concept. Unpublished M. A. thesis, University of New Hampshire, 1954.

Thomson, G. *The factorial analysis of human ability*. (*Fifth Ed.*) New York: Houghton Mifflin, 1951.

Trites, D. K., & Sells, S. B. A note on alternative methods for estimating factor scores. *Journal of Applied Psychology*, 1955, 39, 455-456.

Tryon, R. C. Reliability and behavior domain validity. *Psychological Bulletin*, 1957, 54, 229-249.

Whiteman, M., & Lukoff, I.F. Public attitudes toward blindness. *New Outlook for the Blind*, 1962, 56 No. 5.

Whiteman, M., & Lukoff, I.F. Attitudes and blindness: Components, correlates and effects. Final Report on Grant No. 835a submitted to the Vocational Rehabilitation Administration, 1963.

Whiteman, M., & Lukoff, I. F. Attitudes toward blindness in two college groups. *Journal of Social Psychology*, 1964, 63, 179-191. (a).

Whiteman, M., & Lukoff, I. F. A factorial study of sighted people's attitudes toward blindness. *Journal of Social Psychology*, 1964, 64, 339-353. (b).

Whiteman, M., & Lukoff, I.F. Attitudes toward blindness and other physical handicaps. *Journal of Social Psychology*, 1965, 66, 135-145.

Yuker, H. E., Block, J. R., & Campbell, W. J. *A scale to measure attitude towards disabled persons*. Albertson, New York: Human Resources Foundation, Division of Abilities, Inc., 1960.

Yuker, H. E., Block, J. R., & Younng, Janet H. *The measurement of attitudes toward disabled persons*. Albertson, New York: Human Resources Center, 1966.

APPENDIX A

Factor Loading, Mean, and Standard Deviation of each Item of the Disability Factor Scales, Arranged by Scale

Amputation (N = 483)

Scale 1A - Interaction Strain

No. of Items = 19. Mean = 77.95. Standard Deviation = 14.20. Reliability = .91.

Item No.		Factor Load'g	M	SD
49	I feel uneasy when I come near an amputee.	.68	4.42	1.13
71	I think I would feel somewhat uncomfortable in introducing an amputee friend to other people.	.58	4.56	1.08
55	I would feel nervous with an amputee because a lot of the time I wouldn't know the right thing to do.	.56	3.99	1.26
60	If I lost a limb, I would feel like hiding and avoiding people.	.53	4.00	1.26
44	I imagine it would be disgusting to see the stump of an amputee.	.52	3.98	1.37
12	I would be upset at the idea of spending an evening with an amputee.	.52	4.78	1.15
87	If I introduced an acquaintance who was an amputee to my friends, I think they would feel uneasy in the situation.	.52	3.90	1.19
26	I must admit I often get a feeling of revulsion when I see an amputee.	.52	4.66	1.10
20	I would be uncomfortable being seen with an amputee.	.51	4.81	1.04
34	When I see an amputee I get a sickish feeling in my stomach.	.50	4.66	1.18
16	It would be hard for me to know the right things to do with an amputee.	.50	3.92	1.27
98	It would take a strong stomach to deal with a large group of amputees.	.49	4.06	1.30
101	I would be afraid of saying the wrong thing in talking to an amputee.	.48	3.70	1.29
30	I would feel very uncomfortable with an amputee if he talked to me about his disability.	.47	4.25	1.35
82	Most people would be somewhat embarrassed being seen with an amputee.	.46	3.99	1.13
92	Most people, underneath, feel somewhat repelled by children who are missing a limb.	.42	3.85	1.17
77	I would feel more at ease with an amputee of my own sex than of the opposite sex.	.42	3.84	1.32

Scale 1A - (Continued)

Item No.		Factor Load'g	M	SD
66	If I saw a young child who was missing a limb, I would get very depressed.	.41	3.30	1.31
*5	When I see an amputee I don't feel any different than when I see a normal person.	-.41	3.71	1.43

Scale 2A - Rejection of Intimacy†

No. of Items = 14. Mean = 55.59. Standard Deviation = 11.08. Reliability = .88.

Item No.		Factor Load'g	M	SD
53	I would never adopt a child who was missing a limb.	.65	3.72	1.33
74	I don't think I could fall in love with an amputee.	.62	3.96	1.35
96	I would rather not have any children than have a child who is missing a limb.	.57	4.13	1.40
13	Even if I fell in love with an amputee, I don't think I would actually be willing to marry that person.	.55	4.16	1.38
*31	I would date an amputee as readily as I would anyone else.	-.52	3.57	1.25
37	I would rather be dead than lose both arms.	.46	4.13	1.43
67	Someone who married an amputee might find it harder to make friends.	.43	4.34	1.10
*46	I think if I lost a limb, I could make as many real friends as I do now.	-.41	2.97	1.18
61	If I had an acquaintance who was missing a limb, I would hesitate to bring up the subject of sex.	.39	4.39	1.12
23	An amputee would be unable to do a good job as a waiter.	.37	3.19	1.31
88	Most parents would really prefer that their child not have an amputee as a close friend.	.35	4.06	1.17
8	Relations between amputees and non-amputees can never be as easy and uncomplicated as relations between normal people.	.35	3.95	1.37
81	Amputees are a great burden on their families.	.33	4.28	1.06
1	I would be unable to share with an amputee many activities that I enjoy.	.33	3.82	1.44

* Items scored in reverse.

† Item loadings are from the nine-factor solution.

Scale 3A - Generalized Rejection

No. of Items = 23. Mean = 112.99. Standard Deviation = 13.74. Reliability = .92.

Item No.		Factor Load'g	M	SD
72	Amputees ought to be kept apart from the normal community.	.67	5.35	.81
58	I think that there should be laws against marriage between two amputees.	.62	5.30	.92
25	Amputees are best off staying among themselves.	.60	5.07	1.04
*45	I would be willing to hire an amputee for any job that did not specifically require the use of the missing limb.	-.60	2.07	1.05
99	There must be something the matter with someone who marries an amputee.	.59	5.02	.91
50	It is probably silly, but I can't help connecting amputation with bad character.	.57	5.16	.95
85	My first reaction to amputees is disgust.	.56	5.01	.94
94	Whether or not I would stay friendly with a person would depend a lot on how my other friends felt.	.54	4.79	1.03
35	I would feel that because an amputee can't do a lot of things that I can do, he would never really know me.	.52	4.63	1.06
21	I feel that an amputee must have done something to deserve losing his limb.	.50	5.41	1.02
*80	Amputees are pretty much like everybody else after you get to know them.	-.50	2.09	.85
89	A person who has the misfortune of being an amputee should not have to work for a living.	.49	4.74	1.09
*3	I would be willing to have an amputee as a close friend.	-.48	2.30	1.00
*29	Amputees would prefer to be treated like anyone else.	-.48	2.02	.92
68	Amputees and normal people can't really understand each other.	.47	4.70	.97
17	There is something frightening about the way amputees look.	.47	4.64	1.11
*41	I would be willing to take a job where my employer was an amputee.	-.46	2.03	.89
*39	Amputees are just as intelligent as normal people.	-.46	1.79	.95
11	A person with an artificial arm can't eat without being messy.	.44	4.89	1.03
7	I would not be willing to take a job if I had to work with a co-worker who was an amputee.	.44	5.05	1.04
54	I would never vote for an amputee for President.	.43	4.69	1.21
76	Amputees probably can't understand how normal people feel about a lot of experiences.	.43	4.29	1.20
63	Artificial limbs may help amputees look more normal, but don't really help them do more things.	.42	4.55	1.16

Scale 4A - Authoritarian Virtuousness

No. of Items = 18. Mean = 61.72. Standard Deviation = 13.22. Reliability = .88.

Item No.		Factor Load'g	M	SD
48	Because of their disability, amputees are probably closer to the really important things of life.	.69	3.54	1.33
62	Obedience and respect for authority are the most important virtues children should learn.	.67	2.93	1.53
73	Amputees tend to develop special intellectual gifts.	.62	3.79	1.20
14	There is hardly anything lower than a person who does not feel a great love, gratitude, and respect for his parents.	.61	3.29	1.83
32	Amputees tend to get a more accurate first impression of others than do most people.	.60	3.93	1.25
95	It is not right to show annoyance to an amputee.	.56	3.41	1.49
19	I would go out of my way to be friendly with an amputee.	.53	3.40	1.28
100	When I see a child who is missing a limb, I feel especially warm toward him.	.51	2.77	1.11
78	One of the things I fear most is being abandoned in an emergency.	.49	3.78	1.43
42	Children who are amputees are usually more friendly than other children.	.49	3.82	1.04
90	Every person should make a strong attempt to raise his social position.	.49	2.57	1.21
24	I am more sympathetic than most toward amputees.	.47	3.58	1.18
36	Amputees tend to be more talented musically than normal people.	.47	4.50	1.04
69	Seeing an amputee makes me feel that my own problems are really pretty small.	.45	2.57	1.22
4	Because they know each other's problems better, amputees can put their trust in other disabled people more than in those not disabled.	.42	3.59	1.34
83	People should be especially tolerant of amputees.	.41	3.38	1.26
10	A lot of things you might say without thinking could hurt the feelings of an amputee.	.41	2.77	1.17
56	Amputation deprives people of most worthwhile experiences.	.40	4.10	1.27

Scale 5A - Inferred Emotional Consequences

No. of Items = 11. Mean = 46.08. Standard Deviation = 7.42. Reliability = .84.

Item No.		Factor Load'g	M	SD
70	Amputees feel sorry for themselves.	.58	3.99	1.05
52	Most amputees are bitter.	.58	4.34	1.01
28	Amputees are often angry at the world.	.53	4.14	1.13
57	Generally speaking, amputees tend to be irritable.	.51	4.23	1.06
47	Many amputees are mean and nasty.	.47	4.73	1.10
86	Amputees who seem outwardly adjusted are often inwardly unhappy.	.46	3.84	1.06
38	I imagine many amputees use their disability to take advantage of others.	.45	4.42	1.13
97	Amputees think they ought to be treated better than other people.	.45	4.36	.95
*6	Most amputees are emotionally well-adjusted.	-.34	2.94	1.00
18	Amputees are often on the lookout for insults.	.33	4.24	1.21
79	Amputees are usually self-conscious in the presence of non-amputees.	.32	3.70	1.17

Scale 6A - Distressed Identification[†]

No. of Items = 4. Mean = 14.58. Standard Deviation = 4.58. Reliability = .80.

9	I sometimes am afraid I will lose a limb.	.70	3.67	1.57
40	Seeing someone who is missing a limb makes me worry about losing a limb myself.	.68	3.89	1.43
93	Seeing an amputee makes me worry about unpleasant things that might happen to me.	.56	3.74	1.40
64	When I see an amputee, I try to imagine what it is like to lose a limb.	.40	3.28	1.37

[†] Item loadings are from the nine-factor solution.

Scale 7A - Imputed Functional Limitations

No. of Items = 12. Mean = 47.20. Standard Deviation = 8.21. Reliability = .81.

*51	Amputees are as capable as anyone else.	-.48	2.78	1.23
*27	An amputee is able to do about as well as anyone in most areas of life.	-.45	2.63	1.15

Scale 7A - (Continued)

Item No.		Factor Load'g	M	SD
*33	Most amputees can function almost perfectly with artificial limbs.	-.40	2.72	1.07
43	Amputees must be very afraid of being abandoned in an emergency.	.39	3.55	1.27
75	A man missing a limb would find it very difficult to support a family.	.38	3.84	1.20
91	Amputees need help with many daily activities.	.36	3.77	1.11
*2	A child missing a limb can function with the use of an artificial limb just as well as normal children.	-.36	3.39	1.30
*65	Amputees should have to work and support themselves as other people do.	-.36	2.50	.96
15	The presence of an amputee in a group limits the kinds of things the group can do.	.34	3.57	1.31
22	If I had an acquaintance who was an amputee, I would hesitate to bring up the subject of sports.	.32	4.24	1.29
84	An amputee would feel uncomfortable in a discussion of physical appearance.	.30	3.49	1.13
59	I think amputees probably earn less than normal people.	.25	3.75	1.31

Blindness (N = 477)

Scale 1B - Interaction Strain

No. of Items = 15. Mean = 67.54. Standard Deviation = 10.26. Reliability = .88.

11	I think I would feel somewhat uncomfortable introducing a blind friend to other people.	.62	4.82	1.07
66	I would probably be nervous with a blind person.	.54	4.43	1.17
75	I feel uneasy when I come near a blind person.	.51	4.52	1.10
25	I would be uncomfortable being seen with a blind person.	.48	4.96	.95
50	I would be upset at the idea of spending an evening with a blind person.	.48	4.90	.99
62	If I introduced a blind acquaintance to my friends, I think they would feel uneasy in the situation.	.47	4.04	1.21
88	Most people would be somewhat embarrassed being seen with a blind person.	.44	3.95	1.19
99	Someone who married a blind person might find it harder to make friends.	.42	4.39	1.14

Scale 1B - (Continued)

Item No.		Factor Load'g	M	SD
34	I would prefer to avoid contact with the blind.	.41	4.95	.94
41	Most parents would really prefer that their child not have a blind child as a close friend.	.38	4.00	1.23
1	I would feel very uncomfortable with a blind person if he talked to me about his blindness.	.36	4.52	1.32
103	I think I would prepare myself to meet a really different sort of person if I were told I was going to meet someone who was blind.	.36	4.20	1.17
94	There is something frightening about the way blind people look.	.36	4.66	1.07
84	I would be uncomfortable about offering help to a blind person because he might resent it.	.33	4.32	1.15
18	Many people would think that there was something wrong with someone who had a blind person as a close friend.	.32	4.91	1.11

Scale 2B - Rejection of Intimacy

No. of Items = 12. Mean = 49.03. Standard Deviation = 9.40. Reliability = .84.

*101	I think if I became blind, I could make a pretty good adjustment.	-.50	3.27	1.15
17	I would never adopt a child who was blind.	.46	3.69	1.41
74	I don't think I could fall in love with a blind person.	.45	4.09	1.29
72	I would rather not have any children than have a child who is blind.	.44	4.16	1.39
*9	I would have no objection to having my body used for scientific research after I die.	-.43	3.62	1.62
*32	I would date a blind person as readily as I would anyone else.	-.41	3.70	1.34
*86	I think if I were blind, I could make as many real friends as I do now.	-.40	3.10	1.26
*38	I would be willing to have a blind person as a close friend.	-.39	2.38	1.03
31	I would rather be dead than blind.	.38	4.92	1.14
54	Even if I fell in love with a blind person, I don't think I would actually be willing to marry that person.	.35	4.16	1.27
65	Generally speaking, I think blind children should be kept out of schools for normal children.	.32	4.39	1.37
*20	If it could help a blind child see, I would leave my eyes to him in my will.	-.31	2.30	1.26

Scale 3B - Generalized Rejection

No. of Items = 23. Mean = 112.04. Standard Deviation = 13.35. Reliability = .91.

Item No.		Factor Load'g	M	SD
55	Blind people ought to be kept apart from the normal community.	.70	5.27	.76
60	The blind are best off staying among themselves.	.67	5.04	.85
87	There must be something the matter with someone who marries a blind person.	.60	5.02	.90
51	Blind people and normal people can't really understand each other.	.58	4.79	.96
10	I feel that a blind person must have done something to deserve losing his sight.	.57	5.47	.92
*37	The blind are just as intelligent as normal people.	-.54	1.86	.89
14	I would feel that because a blind person can't see me, he would never really know me.	.51	4.91	1.02
73	If I had a blind acquaintance, I would hesitate to bring up the subject of jobs.	.50	4.55	1.05
80	Many blind people are mean and nasty.	.49	4.87	.98
2	The blind can't eat without being messy.	.49	5.09	.89
19	I think that there should be laws against marriage between two blind people.	.49	5.21	.99
91	Blind people are very unpredictable.	.49	4.49	.95
*29	I would be willing to hire a blind person for any job that did not specifically require seeing.	-.48	2.16	.93
42	I think a blind person would be unable to do a good job as a fiction writer.	.45	4.81	1.18
23	The people who are most concerned with helping the blind are bleeding-heart do-gooders.	.45	4.36	1.35
33	I would not be willing to take a job if I had to work with a co-worker who was blind.	.45	4.98	1.05
47	Blind children would have a bad effect on normal children if they were in the same class.	.45	4.62	1.17
96	Generally speaking, blind people tend to be irritable.	.44	4.55	.89
64	I must admit I often get a feeling of revulsion when I see a blind person.	.44	4.83	1.09
78	If I had a blind acquaintance I would hesitate to bring up the subject of sex.	.43	4.55	1.18
5	Blind people probably are less informed than others.	.43	4.69	1.11
*68	Blind people are pretty much like everybody else after you get to know them.	-.43	2.13	.87
*100	It is important to me to understand other people.	-.41	1.89	.87

Scale 4B - Authoritarian Virtuousness

No. of Items = 17. Mean = 56.08. Standard Deviation = 12.86. Reliability = .87.

Item No.		Factor Load'g	M	SD
98	Because of their disability, blind people are probably closer to the really important things of life.	.69	3.14	1.32
71	Obedience and respect for authority are the most important virtues children should learn.	.65	2.94	1.57
3	There is hardly anything lower than a person who does not feel a great love, gratitude, and respect for his parents.	.65	3.32	1.78
82	The blind have unusually good memories.	.62	2.97	1.11
35	Blind people tend to get a more accurate first impression of others than do most people.	.60	3.25	1.31
7	I would go out of my way to be friendly with a blind person.	.59	3.14	1.37
105	I feel I owe it to a blind person to be nice, because I've been luckier.	.55	3.40	1.40
53	When I see a blind child, I feel especially warm toward him.	.53	2.61	1.09
13	Blindness tends to improve a person's character.	.52	3.91	1.23
92	It is not right to show annoyance to a blind person.	.49	3.38	1.48
85	One of the things I fear most is being abandoned in an emergency.	.47	3.69	1.43
21	Blind people tend to be more talented musically than normal people.	.46	3.78	1.30
57	Blind people are unusually neat in appearance.	.46	3.25	1.17
48	Because they know each other's problems better, the blind can put their trust in other disabled people more than in those not disabled.	.45	3.77	1.31
30	Blind children are usually more friendly than other children.	.44	3.80	1.10
63	Blind people tend to develop special abilities.	.43	2.26	.87
43	I am more sympathetic than most toward blind people.	.43	3.46	1.21

Scale 5B - Inferred Emotional Consequences

No. of Items = 15. Mean = 62.15. Standard Deviation = 8.97. Reliability = .83.

76	The blind feel sorry for themselves.	.54	4.32	1.02
6	The blind are often angry at the world.	.52	4.43	.96
70	Most blind people are bitter.	.51	4.56	.97
26	I imagine many blind people use their blindness to take advantage of others.	.42	4.63	1.04

Scale 5B - (Continued)

Item No.		Factor Load'g	M	SD
95	The blind think they ought to be treated better than other people.	.41	4.63	.91
79	Blind people are a great burden on their families.	.38	4.15	1.09
83	Most people, inside, are somewhat repelled by the blind.	.37	3.94	1.10
89	Blind people who seem outwardly adjusted are often inwardly unhappy.	.35	3.81	1.12
*22	Most blind people are emotionally well-adjusted.	-.34	2.89	1.11
52	Many blind people do dangerous things because they won't accept help.	.34	3.92	1.20
16	Blind people are often on the lookout for insults.	.33	4.59	1.05
36	Blind children probably think they are not as good as normal children.	.31	3.68	1.17
46	The blind have a whole set of feelings which cannot be understood by most other people.	.26	3.64	1.25
59	Most small children probably are afraid of blind people.	.23	3.80	1.20
10~~3~~2	It must be humiliating to have to depend on others as much as blind people do.	.21	3.94	1.19

Scale 6B - Distressed Identification

No. of Items = 10. Mean = 38.71. Standard Deviation = 8.39. Reliability = .81.

97	Seeing a blind person makes me worry about unpleasant things that might happen to me.	.70	3.81	1.35
40	Seeing someone who is blind makes me worry about becoming blind myself.	.69	3.78	1.49
24	I sometimes am afraid I will become blind.	.66	3.76	1.52
58	When I see a blind person, I try to imagine what it is like to be blind.	.45	2.98	1.36
77	I very often feel nervous when I meet a new person.	.39	3.72	1.45
45	I would be afraid of saying the wrong thing in talking to a blind person.	.38	3.82	1.36
12	When I see a blind person I get a sickish feeling in my stomach.	.37	4.84	1.22
61	My first reaction in meeting a blind person is a feeling of pity.	.36	3.56	1.36
28	When I see a blind person in the street, I am tempted to stare.	.34	4.05	1.39
69	If I were blind, I think I would feel like hiding and avoiding people.	.32	4.35	1.20

Scale 7B - Imputed Functional Limitations

No. of Items = 13. Mean = 48.96. Standard Deviation = 9.42. Reliability = .80.

Item No.		Factor Load'g	M	SD
67	A blind person would be unable to do a good job as a politician.	.59	3.98	1.27
56	A blind person would be unable to do a good job as a lawyer.	.59	4.16	1.30
27	I would never vote for a blind man for President.	.52	3.43	1.45
8	A blind person would be unable to do a good job as a doctor.	.47	2.77	1.34
*15	Blind people are as capable as anyone else.	-.43	2.95	1.44
*81	A blind person is able to do about as well as anyone in most areas of life.	-.43	2.81	1.24
*44	I would not be at all reluctant to have a blind lawyer represent me in court.	-.42	2.96	1.33
104	A blind person would be unable to do a good job as a grocer.	.41	3.22	1.23
*39	The blind are capable of doing most jobs.	-.40	3.09	1.32
49	There is a limit as to how successful any blind person can be.	.33	4.01	1.37
4	A mother who is blind would find it practically impossible to take care of a child without the help of a person who can see.	.26	3.69	1.40
90	One of the worst things about blindness is that it leaves you defenseless.	.14	3.96	1.29
93	Blind people need help with many daily activities.	.12	3.54	1.22

Items 4, 90, and 93 are included in this scale on the basis of loadings in the seven-factor solution.

Cosmetic Conditions (N = 520)

Scale 1C - Interaction Strain

No. of Items = 17. Mean = 65.72. Standard Deviation = 11.96. Reliability = .84.

14	I feel uneasy when I come near an amputee.	.66	4.24	1.33
3	I think I would be upset at the idea of spending an evening with someone whose face was badly scarred.	.57	3.88	1.31
51	I cannot look at an amputee whithout experiencing some feeling of revulsion.	.55	4.29	1.26
44	I wouldn't want to really get to know a person who was hunchbacked.	.55	4.24	1.28
74	It would take a strong stomach to deal with a large group of badly scarred people.	.46	3.59	1.42
18	I would feel very uncomfortable if a person with severe facial scars talked to me about his appearance.	.46	3.76	1.47

Scale 1C - (Continued)

Item No.		Factor Load'g	M	SD
68	If I introduced an acquaintance with severe facial scars to my friends, I think they would feel uneasy in the situation.	.40	3.69	1.26
78	If I got badly burned on my face, I think I would feel like hiding and avoiding people.	.38	3.18	1.41
34	I would be upset at the idea of spending an evening with a blind person.	.38	4.78	1.11
*56	I think if I got badly scarred I could make a pretty good adjustment.	-.38	3.23	1.24
9	I would feel somewhat uncomfortable being seen with a person who had a noticeable twitch.	.35	4.13	1.22
60	I am somewhat disturbed by cross-eyed people.	.34	4.29	1.20
63	People who are quite ugly tend to be resentful of others.	.32	3.77	1.32
*47	I would be willing to marry a person whose body was scarred.	-.31	3.18	1.24
*38	I would date a person who had acne as readily as I would anyone else.	-.29	3.61	1.33
24	I would feel more at ease with an ugly person of my own sex than of the opposite sex.	.29	3.61	1.37
6	Small children are probably afraid of very ugly people.	.27	3.32	1.42

Scale 2C - Rejection of Intimacy

No. of Items = 18. Mean = 75.47. Standard Deviation = 13.95. Reliability = .89.

73	Even if I fell in love with a blind person, I don't think I'd actually be willing to marry that person.	.63	4.15	1.40
5	Even if I fell in love with someone who had a bad heart condition, I don't think I would actually be willing to marry that person.	.63	4.61	1.30
66	I would be upset if a child of mine were dating someone I considered very ugly.	.62	4.06	1.36
27	I would rather have no children than have a child who was blind.	.61	4.08	1.61
37	I would be very unhappy if a friend of mine thought of marrying a blind person.	.57	4.63	1.10
49	Even if I fell in love with a person I thought was very ugly, I don't think I would actually be willing to get married.	.55	4.33	1.31

Scale 2C - (Continued)

Item No.		Factor Load'g	M	SD
25	I would be very upset if a friend of mine were planning to marry someone with a heart condition.	.53	4.75	1.10
10	I would rather have no children than have a child who was very ugly.	.52	4.56	1.37
*33	I would date a person with a heart condition as readily as I would anyone else.	-.50	2.67	1.26
61	I wouldn't let myself fall in love with an amputee.	.49	3.85	1.42
53	I don't think I would ever vote for a badly scarred person for President.	.45	4.82	1.12
43	People with severe facial scars probably have a more difficult time getting jobs than do normal people.	.43	3.00	1.33
69	I don't think I would feel as warm at first toward an ugly child as toward a pretty one.	.42	4.18	1.38
29	People who are quite ugly need to have unusual personality assets to be successful in business.	.41	3.24	1.28
2	It would be a strain to work closely with a deaf person.	.40	3.82	1.46
57	I wouldn't want to do charity work with cripples.	.38	4.70	1.30
21	I wouldn't want my child to be in a class where the teacher had bad facial scars.	.34	4.66	1.16
17	I don't imagine I would go steady with someone who was cross-eyed.	.32	3.70	1.39

Scale 3C - Reluctant Aversion

No. of Items = 13. Mean = 59.30. Standard Deviation = 7.44. Reliability = .72.

46	I can't help experiencing some feeling of revulsion when I am with someone whom I know has a heart condition.	.51	5.01	1.09
30	I must admit that I tend to connect bad skin with an unpleasant personality.	.45	4.76	1.11
39	Ugly people are best off staying among themselves.	.41	5.03	.98
15	Most cases of dandruff can't really be corrected by special treatments.	.40	4.08	1.41
52	I am sometimes ashamed of the way I feel about people who have strong body odor.	.36	4.04	1.39
11	I can't help feeling that acne is somehow contagious.	.35	4.50	1.31
22	I sympathize with people who have bad twitches, but I'd just as soon not have anything to do with them.	.34	4.63	1.11

Scale 3C - (Continued)

Item No.		Factor Load'g	M	SD
41	I would be reluctant to take a job where I had to work with someone who had a nervous twitch.	.33	4.41	1.22
*55	I would marry someone who had an ulcer.	-.33	2.55	1.16
4	People with body odor usually can't do much about their condition.	.31	4.94	1.13
*76	In general, I think that people who are very overweight are as intelligent as normal people.	-.31	2.03	1.06
80	I must admit that when I meet a person who is very ugly I expect him to have an unpleasant personality.	.30	4.53	1.12
*71	I often feel sorry for people with acne.	-.23	3.08	1.32

Scale 4C - Superficial Empathy

No. of Items = 12. Mean = 39.67. Standard Deviation = 6.83. Reliability = .62

48	Very overweight people are usually self-conscious in the presence of people who are not heavy.	.47	3.00	1.24
28	I would go out of my way to be friendly with a person with bad facial scars.	.42	4.06	1.17
75	Really ugly-looking people are often angry at the world.	.39	3.68	1.24
70	People who are physically unattractive often develop unusually nice personalities.	.37	2.82	1.24
62	Overweight people who seem outwardly adjusted are often inwardly unhappy.	.37	3.29	1.26
42	Very unattractive people have a whole set of feelings that can't really be understood by most other people.	.37	3.50	1.35
16	It would be interesting to see whether people would react differently to me if I had a twitch.	.35	3.00	1.43
59	I think it would be a valuable experience to be really ugly for a short period of time.	.32	3.61	1.51
40	I am more sympathetic than most toward overweight people.	.30	3.66	1.30
23	I think I can understand what it's like to be really unattractive.	.28	3.01	1.23
12	A lot of things you could say without thinking could hurt the feelings of a very overweight person.	.27	2.48	1.16
1	Plastic surgery can correct any kind of facial disfigurement nowadays.	.25	3.55	1.33

Scale 5C - Qualified Aversion

No. of Items = 10. Mean 41.49. Standard Deviation = 7.32. Reliability = .77.

Item No.		Factor Load'g	M	SD
54	I feel somewhat disgusted when I come near a very overweight person.	.60	4.59	1.16
65	It is unpleasant to be near someone with a lot of dandruff.	.55	4.15	1.28
72	Most people, inside, are somewhat repelled by very overweight people.	.53	3.78	1.24
50	Even very attractive people do not appeal to me if they have a lot of dandruff.	.46	4.39	1.22
26	I somehow feel that people with bad acne are dirty.	.40	4.56	1.20
32	I must admit that when I look at a very ugly person, I have some feeling of revulsion.	.37	4.09	1.32
19	In general, I think I prefer to avoid contact with really ugly people.	.37	4.34	1.21
35	I don't think I could fall in love with a person who was very overweight.	.34	3.41	1.46
8	When I see a person whose face is pimply, I get a sickish feeling in my stomach.	.31	4.27	1.31
77	People with buck teeth do look somewhat amusing.	.31	3.88	1.43

Scale 6C - Proximate Offensiveness

No. of Items = 10. Mean = 32.95. Standard Deviation = 7.56. Reliability = .74.

64	I would be very disgusted if I had to sit next to someone with body odor.	.57	2.45	1.19
31	I would be disturbed if I had to use a towel which had just been used by someone with a lot of pimples.	.48	2.54	1.32
20	People with body odor don't have enough respect for the feelings of others.	.48	3.38	1.50
36	I would not want to have a person with bad breath as a close friend.	.48	3.70	1.40
58	I think if I had bad breath I would be unable to make as many real friends as I do now.	.46	3.21	1.35
13	I would be reluctant to take a job if the supervisor had strong body odor.	.45	3.31	1.49
79	I get nervous when I am near someone who has a noticeable twitch.	.35	4.13	1.22
45	There is no excuse for having bad breath.	.32	3.24	1.54
7	People with cross-eyes should not be permitted to drive.	.29	3.67	1.50
67	A person with severe body rash should keep it covered so as not to offend others.	.29	3.32	1.26

APPENDIX B

Means[a] and Standard Deviations of Scale Scores of Subgroups[b]

Scale	Development Sample		Repeat Group		High School Students		Physical Therapy Students		Psychology Students	
	M	SD	M	SD	M	SD	M	SD	M	SD
Amputation	N = 483		N = 233		N = 154		N = 93		N = 40	
1A	77.95	14.20	82.21	13.37	71.38	14.27	87.28	10.16	76.85	12.74
2A	55.59	11.08	57.04	11.05	54.05	11.66	62.70	9.15	54.08	10.12
3A	112.99	13.74	116.32	11.15	106.01	16.40	121.17	8.62	116.75	9.27
4A	61.72	13.22	66.40	11.89	51.97	10.55	66.47	9.67	74.68	8.88
5A	46.08	7.42	47.41	6.82	44.49	8.00	50.92	5.23	45.20	6.36
6A	14.58	4.58	15.76	4.18	12.44	4.40	15.41	4.05	16.22	4.16
7A	47.20	8.21	48.82	8.53	45.18	7.86	53.19	6.72	45.55	7.98
Blindness	N = 477		N = 233		N = 140		N = 93		N = 40	
1B	67.54	10.26	69.21	9.92	64.16	10.90	72.67	8.38	64.60	11.26
2B	49.03	9.40	49.85	9.74	48.01	9.42	54.34	8.92	48.80	8.57
3B	112.04	13.35	114.29	12.46	107.99	14.85	119.16	11.27	115.38	10.05
4B	56.08	12.86	59.71	12.02	46.41	9.30	58.82	10.22	69.15	8.18
5B	62.15	8.97	63.32	9.17	60.29	8.99	67.15	8.29	60.65	9.13
6B	38.71	8.39	41.11	7.72	33.01	7.31	41.75	7.37	40.30	7.35
7B	48.96	9.42	48.89	9.82	49.86	8.55	52.69	9.32	47.28	8.70
Cosmetic Conditions	N = 520		N = 233		N = 163		N = 93		N = 40	
1C	65.72	11.96	68.79	10.96	62.34	11.97	72.06	9.43	67.28	10.59
2C	75.47	13.95	75.30	13.27	77.69	14.41	81.82	11.15	76.50	10.64
3C	59.30	7.44	61.27	5.93	56.01	8.28	62.81	4.91	62.18	5.11
4C	39.67	6.83	40.99	6.39	36.98	6.77	40.47	6.13	44.28	4.61
5C	41.49	7.32	41.06	7.11	42.34	7.21	41.36	7.08	41.45	6.63
6C	32.95	7.56	33.50	7.11	31.75	7.46	34.96	6.11	37.95	6.01

---

[a] For most factors, a low score suggests a more negative attitude than does a high score. The exceptions are 4A, 4B and 4C for which a low score is interpreted as "overfavorability," and 6A and 6B where a low score reflects distressed identification with the disabled.

[b] Physical Therapy Students and Psychology Students are part of the Repeat Group, and the Repeat and High School Groups are part of the Development Sample.

APPENDIX C

FACTOR ANALYSIS OF 145 AMPUTATION ITEMS AND 4 DEMOGRAPHIC VARIABLES. 7 FACTOR ROTATION (VARIMAX). N = 483

DFS Item Nos.	1 (1A)	2 (4A)	3 (3A)	4 (7A)	5 (5A)	6	7
49	-0.6832	0.0034	0.2191	-0.0713	0.1116	-0.1411	0.0166
71	-0.5797	0.0069	0.3559	0.0254	0.0832	-0.1860	0.0295
55	-0.5634	-0.3605	0.2083	-0.1932	0.1079	-0.0902	-0.1412
60	-0.5306	-0.1138	0.0781	0.0314	0.1181	-0.1983	-0.2424
44	-0.5248	-0.1104	0.1640	-0.0321	0.1427	-0.2788	-0.1071
12	-0.5164	-0.0435	0.4462	-0.0782	-0.0358	-0.1575	0.1717
87	-0.5161	-0.2575	0.1268	0.0211	0.2126	-0.0867	-0.0369
26	-0.5159	-0.1143	0.3319	-0.0483	0.0156	-0.0370	-0.0568
20	-0.5129	0.0099	0.4742	-0.0827	-0.0088	-0.0866	0.1160
34	-0.5014	-0.0126	0.2624	-0.1897	-0.0051	-0.0581	0.0610
16	-0.5008	-0.3102	0.2166	-0.1821	0.0658	-0.1274	-0.0884
98	-0.4936	-0.1575	0.2397	-0.1405	0.1483	-0.2220	-0.0974
-	-0.4834	0.1227	0.3629	-0.1690	-0.0057	-0.1837	0.2963
101	-0.4764	-0.4636	0.0849	-0.1407	0.1488	-0.0852	-0.2101
30	-0.4707	-0.1513	0.2191	-0.0993	0.0931	-0.1511	-0.1103
82	-0.4627	-0.1426	0.1543	0.0397	0.2719	0.0488	0.1462
92	-0.4247	-0.2455	0.1072	0.0311	0.1678	-0.0461	-0.0484
77	-0.4153	-0.1221	0.0503	-0.0563	0.1035	-0.1623	-0.0763
5	0.4088	-0.0869	0.0155	0.2926	-0.0622	0.0535	-0.0196
66	-0.4057	-0.2655	-0.0531	-0.1171	0.0399	-0.1964	-0.1474
-	-0.3988	-0.0434	0.2446	-0.1074	0.2805	-0.2853	0.1317
-	-0.3986	-0.2744	0.2775	0.0382	0.2273	-0.1010	-0.0981
-	-0.3945	-0.0143	0.0659	-0.0409	0.2266	0.0697	-0.1205
46	0.3937	0.0081	-0.2429	0.1948	-0.1456	-0.3064	0.0638
22	-0.3923	-0.2623	0.2031	-0.3234	0.0829	-0.0830	0.0410
-	-0.3891	-0.1940	0.3464	-0.1088	0.0138	-0.2330	-0.1748
84	-0.3864	-0.3597	0.0407	-0.3016	0.1622	-0.1892	-0.1177
-	-0.3791	-0.1431	-0.0042	0.0132	0.2405	0.0787	0.0226
-	-0.3714	-0.1300	-0.2526	-0.0313	0.2497	0.0432	0.0105
-	-0.3711	0.0387	0.1944	-0.0385	0.2074	-0.2132	0.1835
-	-0.3615	-0.1054	0.0510	-0.0894	-0.0084	-0.0019	-0.1095
-	-0.3589	-0.2839	0.0909	-0.2451	0.1364	-0.1185	-0.1072
-	-0.3511	-0.2048	0.2491	-0.1389	0.1030	0.0716	-0.1496
-	-0.3500	-0.1341	-0.1364	-0.0014	0.2068	-0.1715	-0.0145
-	-0.3474	-0.0615	0.2442	-0.2622	0.0378	-0.1965	0.0529
-	-0.3222	-0.3042	-0.1788	-0.0183	0.1671	0.0046	-0.0995
-	0.3057	-0.0049	-0.1794	0.0465	-0.0644	0.2710	-0.2368
-	-0.2944	-0.1885	0.2458	-0.2116	0.1177	-0.2476	0.1678
-	-0.2662	-0.1233	0.2335	-0.2586	-0.0566	-0.1715	0.1134
-	-0.2653	-0.2503	0.1132	-0.0886	0.2533	-0.1252	-0.0867
-	0.2035	-0.0947	-0.0917	0.1115	-0.0631	0.0873	-0.0247
48	-0.0779	-0.6922	0.0565	0.0728	0.0582	0.0975	-0.0800
62	0.0981	-0.6733	0.0016	-0.0226	-0.1894	-0.1583	-0.0127
73	-0.0837	-0.6223	0.1674	0.0584	0.1015	0.1395	-0.0684
14	-0.0095	-0.6070	0.1780	0.0351	-0.1283	-0.0406	-0.0167
32	-0.1069	-0.6015	0.1312	0.0343	0.1342	0.1201	0.0108
95	-0.1139	-0.5576	0.0762	-0.1183	-0.0061	-0.0851	-0.0151
-	0.0801	-0.5372	0.2155	0.0152	-0.1445	-0.0936	-0.1513
19	-0.0276	-0.5335	-0.0580	0.0700	0.0122	0.1058	-0.0127
100	-0.0016	-0.5057	-0.2174	0.0180	0.0023	0.0824	-0.0011

FACTOR ANALYSIS OF 145 AMPUTATION ITEMS AND 4 DEMOGRAPHIC VARIABLES. 7 FACTOR ROTATION (VARIMAX). N = 483*

DFS Item Nos.	1 (1A)	2 (4A)	3 (3A)	4 (7A)	5 (5A)	6	7
78	-0.1615	-0.4915	0.0630	-0.1078	0.0464	-0.0431	-0.2596
42	-0.1385	-0.4899	0.1519	-0.0295	0.1485	0.1379	0.0307
90	0.0105	-0.4885	-0.1123	0.0687	-0.0302	-0.1278	0.0779
24	-0.0237	-0.4737	0.0691	0.0072	0.1150	0.1950	-0.0403
36	-0.0243	-0.4680	0.2490	0.0552	0.1191	0.1539	0.0277
69	-0.0601	-0.4508	-0.3274	-0.0260	-0.0325	-0.1145	-0.1237
4	-0.2132	-0.4218	0.0842	-0.0580	0.2331	-0.0663	0.0453
83	-0.1378	-0.4115	-0.0216	0.0216	0.1919	-0.1597	0.0226
10	-0.2322	-0.4115	-0.0848	-0.1927	0.1286	-0.0836	0.0063
56	-0.2795	-0.3989	0.2444	-0.2285	0.1941	-0.2432	-0.0299
79	-0.3737	-0.3965	0.0623	-0.2084	0.3158	-0.0213	-0.0668
91	-0.1720	-0.3877	0.1943	-0.3597	0.2290	-0.1109	-0.0237
-	-0.1444	-0.3838	0.0168	-0.2421	0.1510	-0.1691	0.0290
-	-0.0255	-0.3762	0.0421	0.1476	-0.0682	-0.0102	0.1055
-	-0.0459	-0.3752	-0.1082	0.0526	-0.0182	-0.0406	-0.0341
-	-0.2375	-0.3715	0.2243	-0.2179	0.1291	-0.2206	0.0323
-	-0.1583	-0.3681	0.1798	-0.1574	0.3086	-0.1358	0.0998
64	-0.1356	-0.3677	0.0322	0.1333	0.1290	0.1712	-0.2702
-	0.0250	-0.3255	0.1770	0.2267	0.0230	0.1978	0.0545
-	-0.1732	-0.3252	0.2131	-0.0682	0.2992	-0.0087	-0.0652
-	-0.0882	-0.3206	0.0074	-0.1221	-0.0526	-0.2130	-0.1597
-	-0.2260	-0.2908	0.1175	-0.0384	0.1108	0.0786	-0.0688
-	-0.1293	-0.1617	-0.0258	-0.0475	0.1235	-0.1345	-0.0004
72	-0.0437	-0.0923	0.6727	0.0468	0.1776	-0.1548	-0.0982
58	-0.0329	-0.1502	0.6206	0.0773	0.1233	-0.1266	-0.0037
45	0.0702	-0.0589	-0.6012	0.1367	-0.1117	0.1497	0.0409
25	-0.1786	-0.1474	0.5968	-0.1052	0.0899	-0.1199	0.1020
99	-0.1641	0.0400	0.5896	0.0535	0.2235	-0.2794	-0.0322
50	-0.1314	-0.1375	0.5677	0.0584	0.1663	0.0309	-0.1863
85	-0.3644	0.0055	0.5604	0.0114	0.1065	-0.1071	-0.1466
94	-0.2319	-0.0623	0.5399	0.0565	0.0507	-0.1022	-0.1066
35	-0.2347	-0.2235	0.5156	-0.0880	0.2250	-0.2052	0.0578
21	-0.0312	-0.1547	0.5021	-0.0023	0.0260	0.0926	0.0593
80	0.2473	-0.1302	-0.4993	0.1720	-0.1532	0.1294	-0.0154
89	-0.0762	-0.3071	0.4875	-0.2368	0.0391	0.0000	-0.1781
3	0.3132	-0.0452	-0.4824	0.0909	-0.0305	0.3221	-0.0321
29	-0.0171	-0.1701	-0.4793	0.1204	-0.1823	0.1188	0.0187
68	-0.2575	-0.2036	0.4718	-0.0380	0.2498	-0.1342	-0.0616
17	-0.3936	-0.0371	0.4707	-0.0905	0.1469	-0.0315	-0.1042
41	0.2473	0.1097	-0.4571	0.1848	0.1186	0.0511	-0.0930
39	-0.0045	-0.0652	-0.4551	0.0601	-0.0642	-0.0447	0.0588
11	-0.1334	-0.1616	0.4394	-0.2166	0.1215	0.0120	0.1977
7	-0.3114	-0.0497	0.4357	-0.1745	-0.1747	-0.1103	0.2145
54	-0.2060	-0.0853	0.4316	-0.0934	0.1333	-0.2964	0.0221
76	-0.2138	-0.3763	0.4263	-0.1204	0.1893	-0.2041	0.0739
63	-0.0575	-0.3565	0.4158	-0.1217	0.2018	-0.1162	-0.0235
-	-0.0988	-0.3677	0.4065	-0.1967	0.3002	-0.1356	0.1020
-	-0.1291	-0.2292	0.3970	-0.1916	0.3083	-0.0123	-0.0127
-	-0.2976	-0.2526	0.3969	-0.1839	0.0821	-0.2330	-0.1069
-	-0.1138	-0.3604	0.3963	-0.1279	0.1968	-0.0533	-0.0373

*Cont.

FACTOR ANALYSIS OF 145 AMPUTATION ITEMS AND 4 DEMOGRAPHIC VARIABLES. 7 FACTOR ROTATION (VARIMAX). N = 483*

DFS Item Nos.	1 (1A)	2 (4A)	3 (3A)	4 (7A)	5 (5A)	6	7
-	-0.2252	-0.1736	0.3953	-0.2084	0.1142	-0.1679	0.0807
-	-0.1837	-0.2086	0.3951	-0.1718	0.1687	-0.2573	0.1469
-	0.0971	0.0273	-0.3762	0.2214	-0.0445	-0.0387	0.0519
-	-0.3261	0.0206	0.3601	-0.1211	0.0983	-0.2176	0.1458
-	-0.3125	0.0110	0.3577	-0.0009	0.1243	0.0987	0.2489
-	0.2892	-0.0982	-0.3477	-0.0004	-0.0004	-0.0438	0.0506
-	-0.0733	0.0250	0.3383	-0.1436	0.0887	-0.0448	0.1385
-	-0.1234	-0.2043	0.3237	-0.2804	0.0769	-0.2642	-0.0722
-	-0.2973	-0.1168	0.3193	-0.1714	0.2604	-0.2670	0.0573
-	-0.2827	-0.2648	-0.3022	-0.1073	0.0550	-0.1300	0.1183
-	0.0778	-0.1152	-0.2982	0.1280	-0.0279	0.2587	-0.0218
-	-0.0439	-0.1205	-0.2599	0.0201	0.0245	-0.2344	0.0276
51	0.2321	-0.0363	-0.2891	0.4777	-0.1547	0.2050	-0.0202
27	0.1725	-0.1650	-0.2755	0.4536	-0.1341	0.2022	-0.1341
33	0.0714	-0.2921	-0.2483	0.4015	-0.2627	0.1517	-0.0789
43	-0.1610	-0.3434	0.1510	-0.3877	0.2223	-0.0692	-0.0095
75	-0.2734	-0.2154	0.2229	-0.3756	0.2410	-0.2337	-0.0859
2	0.1519	-0.2449	-0.0543	0.3627	-0.1588	0.3166	-0.0104
65	0.0552	0.1725	-0.3075	0.3578	-0.0204	0.0430	0.0104
6	0.1516	-0.1568	-0.0235	0.3419	-0.3416	0.1296	-0.0590
15	-0.2661	-0.0709	0.1550	-0.3391	0.1473	-0.1146	0.1257
59	-0.2075	0.0724	0.0308	-0.2454	0.2112	-0.2440	0.1634
-	0.0199	-0.1504	-0.0094	0.2319	-0.0045	-0.0487	0.1373
-	0.0013	0.0271	-0.1614	0.1740	-0.0205	-0.0014	0.0427
70	-0.2351	-0.1113	0.1754	-0.2832	0.5849	-0.1295	-0.0612
52	-0.2441	-0.0236	0.1976	-0.1304	0.5839	-0.1767	-0.0748
28	-0.1816	-0.0743	0.1885	-0.1056	0.5281	-0.0910	0.1604
57	-0.1609	-0.3006	0.2808	-0.1396	0.5102	-0.1508	-0.0950
47	-0.0410	0.0102	0.3244	-0.0142	0.4686	-0.0924	0.0439
86	-0.1909	-0.1527	0.1508	-0.0942	0.4604	-0.0704	-0.0389
38	-0.1420	0.0442	0.2777	-0.0023	0.4498	-0.0643	-0.0022
97	-0.2627	-0.0504	0.3308	0.0365	0.4483	-0.1622	-0.0396
18	-0.1331	-0.2083	0.0887	-0.0976	0.3316	0.0584	0.0661
53	-0.2993	0.0940	0.1859	-0.0976	0.1639	-0.5923	0.0439
74	-0.4501	0.0012	0.1957	-0.0393	0.0991	-0.5662	0.0662
96	-0.2854	-0.0714	0.2362	0.0476	0.1940	-0.5654	-0.0431
13	-0.3005	-0.0064	0.2953	-0.0835	0.2179	-0.4795	0.1054
37	-0.2551	-0.1556	0.2040	0.0845	0.0377	-0.4763	-0.1536
31	0.4045	-0.0811	-0.1409	0.2489	-0.1048	0.4094	-0.0536
61	-0.2771	-0.1897	0.2994	-0.1698	0.1432	-0.3162	-0.0501
23	-0.0709	0.0664	0.0512	-0.2255	0.0034	-0.3159	0.0633
-	-0.0063	-0.0113	-0.0948	0.1846	-0.0021	0.3146	-0.0036
93	-0.3247	-0.3957	0.0931	-0.0544	0.0477	-0.1112	-0.4984
40	-0.3638	-0.3567	0.0618	-0.0694	0.0557	0.0176	-0.4514
9	-0.1740	-0.2813	0.0043	-0.0023	0.0070	0.0104	-0.4057
-	-0.2438	-0.0218	0.0587	0.0917	-0.1584	0.3080	-0.3473
-	0.0358	-0.1373	0.0041	-0.0147	0.0987	-0.0301	0.1540
	11.8226	10.6641	12.1849	4.0674	5.2965	5.1646	2.3134
*Cont.	23%	21%	24%	8%	10%	10%	5%

FACTOR ANALYSIS OF 145 AMPUTATION ITEMS AND 4 DEMOGRAPHIC VARIABLES. 9 FACTOR ROTATION (VARIMAX). N = 483

DFS Item Nos.	1	2	3	4 (2A)	5	6	7	8	9 (6A)
72	-0.6872	-0.1001	-0.0570	-0.1501	0.1301	0.0204	-0.1059	0.0093	0.0040
58	-0.6192	-0.1619	0.0099	-0.1406	0.1064	-0.0596	0.0150	0.0405	0.0530
99	-0.6080	0.0300	-0.1606	-0.2863	0.1710	-0.0303	-0.0863	0.0226	-0.0651
45	0.5939	-0.0535	0.0402	0.1758	-0.1248	-0.1170	-0.0737	0.0546	-0.0216
85	-0.5895	0.0142	-0.3873	-0.1113	0.0748	-0.0026	0.0008	-0.0413	0.0247
50	-0.5869	-0.1315	-0.1547	0.0251	0.1248	0.0206	-0.0765	0.0314	0.1301
25	-0.5841	-0.1574	-0.1312	-0.1578	0.1127	0.0471	0.1802	-0.0084	-0.0736
94	-0.5478	-0.0592	-0.1986	-0.1422	0.0029	0.0040	-0.0080	0.0793	0.0975
35	-0.4986	-0.2297	-0.1655	-0.2864	0.2046	0.0761	0.0968	0.1113	0.0198
21	-0.4980	-0.1627	-0.0153	0.0912	0.0535	-0.0183	0.1327	-0.0118	-0.0319
80	0.4941	-0.1289	0.2093	0.1797	-0.1732	-0.1091	-0.1501	0.0258	0.0280
17	-0.4862	-0.0251	-0.3985	-0.0609	0.1512	0.0491	0.1115	-0.0440	0.0573
89	-0.4818	-0.2969	-0.1237	-0.0229	0.0211	0.3192	-0.0208	-0.0536	0.0420
29	0.4806	-0.1614	-0.0171	0.1150	-0.2062	-0.0785	-0.0327	0.0946	0.0362
3	0.4724	-0.0418	0.2287	0.3808	-0.0338	-0.0213	-0.1546	0.0098	-0.0171
68	-0.4611	-0.2006	-0.1956	-0.2348	0.1886	0.1073	-0.0022	0.1985	0.1320
20	-0.4566	0.0128	-0.3960	-0.2088	-0.0151	0.0393	0.2832	0.1623	-0.0088
39	0.4556	-0.0631	-0.0040	-0.0368	-0.0694	-0.0840	-0.0273	0.0188	-0.0188
41	0.4258	0.1104	0.1600	0.1418	0.1022	-0.1667	-0.2512	-0.0683	0.0254
54	-0.4183	-0.0908	-0.1436	-0.3636	0.1037	0.0914	0.0444	0.0680	0.0017
76	-0.4176	-0.3827	-0.2050	-0.2487	0.1647	0.1149	0.0488	0.0455	-0.1108
11	-0.4049	-0.1714	-0.0530	-0.0525	0.2030	0.0841	0.3389	-0.0093	-0.0416
63	-0.4036	-0.3599	-0.0563	-0.1578	0.1735	0.1672	-0.0204	0.0545	0.0052
-	-0.3984	-0.3599	-0.1526	-0.0531	0.2026	0.1121	0.0283	-0.0652	-0.0245
-	-0.3944	-0.2438	-0.3001	-0.2801	0.0504	0.2040	0.0150	-0.0202	0.0212
-	-0.3895	-0.2283	-0.1368	-0.0473	0.3319	0.1476	0.0915	-0.0229	0.0214
-	-0.3861	-0.3767	-0.0804	-0.1829	0.3177	0.1430	0.1093	0.0132	-0.0635
-	-0.3710	-0.1767	-0.1689	-0.2480	0.1178	0.1758	0.1543	0.0523	-0.0456
-	-0.3646	-0.2193	-0.0977	-0.3375	0.1837	0.0993	0.1778	0.0553	-0.0367
-	0.3536	0.0221	0.0704	0.0522	-0.0135	-0.3163	-0.0393	-0.1268	-0.0123
-	0.3519	-0.1064	0.2477	0.0075	0.0095	-0.0056	-0.1106	-0.0685	-0.0753
-	-0.3368	0.0023	-0.2056	-0.0177	0.1174	-0.0219	0.2485	0.2688	-0.1056
-	-0.3304	0.0158	-0.1858	-0.3180	0.1408	-0.0117	0.3030	0.0601	0.0713
-	-0.3250	-0.2022	-0.1844	-0.2521	0.0804	0.2550	-0.0103	-0.1825	-0.1234
-	-0.3110	0.0158	0.0097	-0.0991	0.1483	0.0417	0.2436	0.0004	0.0033
-	0.3034	-0.2588	-0.2891	-0.1322	0.0982	-0.0428	0.1549	-0.0939	-0.0813
-	0.2911	-0.1086	0.0483	0.2740	-0.0387	-0.0792	-0.0561	0.0758	0.0578
-	0.2571	-0.1214	-0.0432	-0.2108	0.0322	-0.0945	-0.0226	-0.0806	0.0031
48	-0.0632	-0.6839	-0.1391	0.0925	-0.0125	0.0568	-0.1358	0.1199	0.0256
62	0.0069	-0.6754	0.0630	-0.0923	-0.1614	-0.0127	0.0106	-0.1909	0.0148
73	-0.1590	-0.6145	-0.0836	0.0929	0.0505	0.0519	-0.0418	0.1785	0.1469
14	-0.1872	-0.6078	-0.0662	0.0434	-0.0886	-0.0956	0.0565	-0.2135	-0.0133
32	-0.1176	-0.5973	-0.0886	0.0689	0.1089	0.0171	0.0356	0.1621	0.1140
95	-0.0665	-0.5521	-0.1332	-0.0815	0.0148	0.0774	0.0761	-0.0928	0.0307
-	-0.2268	-0.5343	-0.0003	-0.0228	-0.1687	0.0551	-0.1328	-0.1475	0.0131
19	0.0629	-0.5281	-0.0340	0.1077	0.0135	-0.0604	0.0238	0.0357	0.1150
100	0.2090	-0.4997	-0.0628	0.1515	0.0567	-0.1104	0.0584	-0.1680	0.0375
90	0.1164	-0.4939	0.0039	-0.0988	-0.0282	-0.1029	-0.0011	-0.0363	-0.0268
42	-0.1274	-0.4846	-0.0851	0.0537	0.1388	0.0602	0.1104	0.1898	0.1510
36	-0.2415	-0.4698	-0.0233	0.1238	0.0921	0.0135	0.0071	0.1446	0.0319

FACTOR ANALYSIS OF 145 AMPUTATION ITEMS AND 4 DEMOGRAPHIC VARIABLES. 9 FACTOR ROTATION (VARIMAX). N = 483 (Cont.)

DFS Item Nos.	1	2	3	4 (2A)	5	6	7	8	9 (6A)
78	-0.0663	-0.4693	-0.2162	-0.0701	-0.0153	0.2252	-0.1416	0.0215	0.1756
24	-0.0690	-0.4671	-0.0588	0.1958	0.1182	0.0164	0.0145	0.0307	0.0829
69	0.3168	-0.4369	-0.1255	-0.0614	-0.0234	-0.0137	-0.0662	-0.1634	0.0962
4	-0.0712	-0.4190	-0.1890	-0.1397	0.1957	0.0794	0.0210	0.1611	0.0251
83	0.0052	-0.4122	-0.1895	-0.1169	0.1975	-0.0998	-0.0216	-0.1018	-0.0528
10	0.1081	-0.4002	-0.2014	-0.1552	0.1388	0.1479	0.1166	0.0426	0.1010
56	-0.2329	-0.3923	-0.2728	-0.2870	0.2052	0.1606	0.0961	-0.0642	0.0400
-	-0.0262	-0.3827	0.0394	-0.0369	-0.0792	-0.1396	0.0685	0.1238	0.0644
-	-0.0065	-0.3808	-0.1812	-0.1895	0.1548	0.2026	0.0298	-0.0618	-0.1020
91	-0.1810	-0.3805	-0.2210	-0.1453	0.2467	0.3203	0.0664	-0.0891	-0.0742
-	-0.1667	-0.3729	-0.1614	-0.1946	0.2815	0.1562	0.0135	0.0998	-0.1177
-	0.1013	-0.3707	-0.0785	-0.0122	-0.0267	-0.0549	-0.0403	-0.0422	0.0318
-	-0.2035	-0.3692	-0.2103	-0.2858	0.1241	0.1874	0.0959	0.0170	-0.0143
-	-0.1724	-0.3308	0.0627	0.1713	-0.0136	-0.1426	-0.0028	0.2116	0.0794
-	-0.2125	-0.3184	-0.1810	-0.0542	0.2756	0.0869	-0.0117	0.0792	0.0945
-	-0.0268	-0.3100	-0.1836	-0.1365	-0.0375	0.0749	-0.0649	-0.2793	-0.0105
-	-0.1160	-0.2784	-0.2233	0.0285	0.0884	0.0713	0.0352	0.0942	0.1060
-	0.0030	-0.1486	0.0419	-0.0205	0.1296	-0.0583	0.0773	-0.0211	-0.1091
49	-0.2337	0.0190	-0.6450	-0.2119	0.1082	-0.0329	0.2103	0.0293	-0.0124
60	-0.1141	-0.0884	-0.5710	-0.2292	0.0298	0.0248	-0.1301	0.0416	0.1074
55	-0.2079	-0.3348	-0.5613	-0.1887	0.0575	0.2296	0.0671	0.0941	0.0964
44	-0.1978	-0.0954	-0.5597	-0.2686	0.1339	-0.0681	0.0380	-0.1365	0.0065
26	-0.3568	-0.0994	-0.5364	-0.0396	0.0338	-0.0416	0.1703	-0.1064	-0.0150
98	-0.2563	-0.1420	-0.5119	-0.2501	0.1398	0.0717	0.0748	-0.0815	0.0155
30	-0.2415	-0.1346	-0.5012	-0.1562	0.0984	0.0197	0.0888	-0.1209	0.0276
16	-0.2137	-0.2906	-0.4864	-0.2055	0.0436	0.1696	0.1152	0.0322	0.0716
101	-0.0871	-0.4350	-0.4852	-0.1662	0.0958	0.1878	-0.0026	0.0798	0.2064
71	-0.3531	0.0147	-0.4755	-0.3129	0.0184	-0.0106	0.1246	0.2394	0.0497
87	-0.1287	-0.2426	-0.4694	-0.2064	0.1208	0.0513	-0.0025	0.2825	0.0841
34	-0.2607	-0.0016	-0.4581	-0.0936	0.0788	-0.0057	0.3653	-0.1446	0.0007
66	0.0376	-0.2438	-0.4344	-0.1892	0.0625	0.0106	0.0789	-0.1776	0.1254
-	-0.0901	0.0052	-0.4319	0.0358	0.2013	0.0368	0.0069	0.0425	0.0577
92	-0.1240	-0.2324	-0.4283	-0.1014	0.1088	-0.0007	-0.0073	0.1353	0.0270
84	-0.0391	-0.3394	-0.4247	-0.2327	0.1619	0.2529	0.0572	-0.0906	0.0368
79	-0.0675	-0.3795	-0.4243	-0.0728	0.2975	0.1921	0.0277	0.0255	0.0016
-	-0.2991	-0.2630	-0.4122	-0.1259	0.1906	-0.0473	-0.0019	0.0352	0.0807
-	-0.3635	-0.1785	-0.4113	-0.2336	0.0089	0.0661	0.0451	-0.1471	0.0829
77	-0.0604	-0.1072	-0.4077	-0.2083	0.0750	0.0308	0.0344	0.0246	0.0606
-	-0.1002	-0.2655	-0.4054	-0.1093	0.1951	0.1020	0.1518	-0.2320	0.0642
-	0.1549	-0.2860	-0.4032	-0.0160	0.0923	0.0897	-0.1376	0.0898	-0.0483
5	-0.0189	-0.1024	0.4020	0.0932	-0.1321	-0.1296	-0.2624	0.1395	0.0265
-	0.2426	-0.1149	-0.3875	-0.0229	0.2037	0.0385	-0.0089	0.1662	-0.0184
-	-0.0080	-0.1321	-0.3835	0.0205	0.2063	-0.0162	0.0424	0.1530	-0.0119
22	-0.1783	-0.2507	-0.3553	-0.1773	0.1085	0.2543	0.2365	0.0106	-0.0105
-	-0.2485	-0.1842	-0.3540	-0.0093	0.0612	0.2107	0.0318	0.1117	0.1161
-	-0.0532	-0.0856	-0.3478	-0.0535	-0.0161	0.0792	0.0919	0.0192	0.1248
-	0.1247	-0.1240	-0.3471	-0.2086	0.1760	-0.0414	-0.0074	0.0552	0.0294
-	0.2022	-0.0212	0.3354	0.2855	-0.0003	-0.0971	0.1370	0.0372	-0.0956
-	-0.0890	0.0115	-0.3051	0.2926	-0.2337	0.0887	-0.1341	0.0920	0.2232
-	-0.1126	-0.2394	-0.2568	-0.1809	0.2263	0.0860	-0.0044	0.0602	0.1215

FACTOR ANALYSIS OF 145 AMPUTATION ITEMS AND 4 DEMOGRAPHIC VARIABLES. 9 FACTOR ROTATION (VARIMAX). N = 483 (Cont.)

DFS Item Nos.	1	2	3	4 (2A)	5	6	7	8	9 (6A)
-	0.1011	-0.0969	0.2318	0.1011	-0.0487	-0.0968	-0.0140	0.0173	0.1592
53	-0.1788	0.0877	-0.2208	-0.6495	0.1373	0.0126	0.0211	-0.0082	-0.0190
74	-0.1928	-0.0014	-0.3550	-0.6212	0.0902	-0.0940	0.1194	-0.0264	0.0142
96	-0.2523	-0.0758	-0.2579	-0.5699	0.1476	-0.1050	-0.0867	-0.0510	0.0161
13	-0.2786	-0.0153	-0.1864	-0.5452	0.2379	-0.0660	0.1642	-0.0105	0.0555
31	0.1131	-0.0855	0.2901	0.5232	-0.1161	-0.1387	-0.1985	-0.0284	-0.0627
37	-0.2252	-0.1514	-0.2484	-0.4579	-0.0102	-0.1031	-0.1150	-0.0951	0.1100
67	-0.2235	-0.0470	-0.3006	-0.4314	0.2107	0.1258	0.0615	0.2809	-0.0635
46	0.2330	-0.0017	0.3457	0.4104	-0.0914	-0.2168	-0.0188	-0.1023	-0.0316
2	0.0256	-0.2477	0.0863	0.3918	-0.2056	-0.2428	-0.1503	0.0852	-0.0425
61	-0.2882	-0.1855	-0.2429	-0.3869	0.1061	0.1761	0.0129	0.0396	0.0329
23	-0.0281	0.0616	-0.0314	-0.3689	-0.0058	0.2056	0.0310	-0.0051	-0.1020
88	-0.1720	0.0326	-0.2506	-0.3549	0.1534	0.0373	0.1146	0.2956	-0.0599
8	-0.2066	-0.1927	-0.1701	-0.3486	0.1693	0.0666	0.3076	0.0318	0.0468
59	0.0003	0.0674	-0.1223	-0.3397	0.2376	0.1361	0.1811	0.0593	-0.0538
81	-0.3093	-0.1188	-0.2571	-0.3331	0.2573	0.1033	0.1016	0.0248	-0.0378
1	-0.2075	-0.0553	-0.2380	-0.3261	0.0459	0.2146	0.2277	0.0973	0.0704
-	0.0834	-0.0068	-0.0251	0.2919	-0.0655	-0.0496	-0.0993	0.2310	-0.0132
-	-0.1947	-0.1225	-0.1694	-0.2747	-0.0316	0.1971	0.2536	0.0490	-0.0121
-	0.0363	-0.1585	-0.0943	-0.1812	0.1091	0.0342	0.0154	0.0645	0.0785
70	-0.1761	-0.1035	-0.2649	-0.1824	0.5985	0.2014	0.0209	-0.0258	0.0455
52	-0.2102	-0.0186	-0.2615	-0.2177	0.5734	0.0657	-0.0403	0.0120	0.0741
28	-0.1790	-0.0832	-0.1359	-0.1458	0.5719	-0.0441	0.1592	0.0485	-0.0071
57	-0.2907	-0.2969	-0.2098	-0.1723	0.4880	0.1247	-0.0848	-0.0070	0.0432
47	-0.3281	-0.0001	-0.0277	-0.1169	0.4689	-0.0342	-0.0086	0.0532	0.0090
38	-0.2935	0.0408	-0.1475	-0.0699	0.4649	-0.0822	0.0192	-0.0131	0.0368
97	-0.3527	-0.0507	-0.2663	-0.1762	0.4339	-0.0997	-0.0180	0.0126	0.0553
86	-0.1514	-0.1485	-0.1977	-0.1457	0.4040	0.1396	-0.0879	0.1706	0.0314
6	0.0013	-0.1592	0.1155	0.1987	-0.4031	-0.2012	-0.1734	0.0520	-0.0115
18	-0.0865	-0.2080	-0.1446	0.0296	0.3524	0.0354	0.0807	0.0326	-0.0216
33	0.2154	-0.2881	0.0113	0.2299	-0.3341	-0.2731	-0.2132	0.0662	0.0227
75	-0.2053	-0.2038	-0.2808	-0.3185	0.2205	0.3795	0.0244	0.0009	0.0026
43	-0.1268	-0.3352	-0.1834	-0.1362	0.2356	0.3685	0.0870	-0.0190	-0.0431
51	0.2514	-0.0423	0.1687	0.2922	-0.2384	-0.3261	-0.2921	0.1303	-0.0508
65	0.2690	0.1683	0.0132	0.1126	-0.0699	-0.3197	-0.1934	0.0528	-0.0638
-	0.0013	-0.1635	0.0445	-0.0083	0.0081	-0.2956	0.0360	0.0008	-0.0363
-	0.1463	0.0238	-0.0029	0.0363	-0.0200	-0.2064	-0.0246	-0.0104	-0.0141
-	-0.3240	0.1155	-0.3032	-0.3142	0.0642	-0.0260	0.4818	0.0850	-0.0479
12	-0.4160	-0.0435	-0.3443	-0.2777	0.0143	-0.0729	0.4266	0.0883	0.0946
7	-0.3875	-0.0556	-0.1443	-0.2309	-0.1201	0.0704	0.4179	0.0858	0.0094
27	0.2341	-0.1615	0.0940	0.2886	-0.2235	-0.2874	-0.3190	0.1024	0.0624
15	-0.1165	-0.0685	-0.1856	-0.2245	0.1948	0.2335	0.2728	0.0367	-0.0103
82	-0.1420	-0.1393	-0.3755	-0.1103	0.1836	0.0359	0.0768	0.4294	-0.0351
9	0.0058	-0.2465	-0.1017	-0.0371	0.0332	-0.0103	0.0589	-0.0471	0.7019
40	-0.0561	-0.3131	-0.3094	-0.0630	0.0503	0.0962	0.0455	0.0098	0.6793
93	-0.1074	-0.3549	-0.3403	-0.1332	0.0201	0.0997	-0.0877	-0.0981	0.5578
64	-0.0456	-0.3446	-0.1437	0.1591	0.1064	-0.0768	-0.0624	0.0573	0.4005
	11.7676	10.2565	10.3619	7.4285	5.1287	2.8269	2.8434	1.8499	2.1319
	22%	19%	19%	14%	9%	5%	5%	3%	4%

FACTOR ANALYSIS OF 145 BLINDNESS ITEMS AND 4 DEMOGRAPHIC VARIABLES. 9 FACTOR ROTATION (VARIMAX). N = 477

DFS Item Nos.	1 (3B)	2 (4B)	3 (7B)	4 (6B)	5 (5B)	6 (1B)	7 (2B)	8	9
55	-0.7029	0.0207	-0.0169	0.0043	-0.0307	-0.1094	0.0459	-0.1509	-0.0044
60	-0.6684	0.0789	-0.1471	0.0333	-0.1168	-0.1092	0.1886	-0.0373	0.0414
87	-0.5976	0.0227	-0.1416	0.0045	-0.1374	-0.1226	0.1953	-0.1551	0.0667
51	-0.5811	0.1149	0.0163	-0.0110	-0.1254	-0.2521	0.1372	-0.0889	0.1614
10	-0.5745	0.0934	0.0724	-0.1436	-0.0808	-0.1016	-0.1477	0.0002	0.0125
37	+0.5427	0.1020	0.1716	0.0056	0.1749	0.0197	-0.0653	-0.0700	0.0704
14	-0.5087	0.0528	-0.1509	-0.0353	-0.0529	-0.1996	-0.0260	-0.0618	0.2547
73	-0.4996	0.1480	-0.1511	-0.0356	-0.0926	-0.2022	0.1344	-0.0797	0.3154
80	-0.4939	0.0039	-0.0253	0.0963	-0.2221	-0.0875	0.0821	-0.1066	0.0990
2	-0.4939	0.0119	-0.1184	0.0313	0.0165	-0.0525	-0.0851	-0.0839	0.2363
19	-0.4908	0.0198	-0.0959	0.0014	-0.0455	0.0333	-0.0173	-0.1410	0.0769
25	-0.4899	-0.0349	-0.1950	-0.0567	-0.0349	-0.4782	0.1322	-0.0248	-0.0668
91	-0.4858	0.2564	-0.0186	0.0005	-0.2076	-0.1566	0.0863	-0.0856	0.1824
29	0.4754	0.0340	0.1518	0.0421	-0.0161	0.0774	-0.2477	-0.1555	0.0094
42	-0.4514	0.1007	-0.1622	-0.1001	-0.0021	-0.1850	-0.1666	0.1252	0.1562
23	-0.4498	0.3064	-0.0465	-0.1686	-0.1306	-0.0765	0.0797	0.0802	0.1659
33	-0.4481	0.0198	-0.0946	-0.0782	-0.0851	-0.0535	0.1499	-0.0013	0.0242
47	-0.4469	0.2165	-0.1024	0.0157	-0.2359	-0.1293	0.1304	-0.1534	0.2656
96	-0.4420	0.1153	-0.0748	-0.0141	-0.3619	-0.1391	0.1878	-0.1669	0.2293
64	-0.4378	0.1199	-0.0725	-0.3569	-0.1350	-0.3055	-0.0726	-0.2058	0.1049
68	0.4329	0.2343	0.1705	0.0155	0.1444	0.1162	-0.1843	0.0480	0.0600
78	-0.4322	0.2195	-0.1652	-0.0724	-0.0647	-0.2358	0.2120	-0.1081	0.1840
5	-0.4278	0.1893	-0.2426	-0.0275	-0.1825	-0.0903	-0.0751	0.0537	0.2642
38	0.4270	0.0127	0.1856	0.0878	0.0371	0.2287	-0.3536	-0.0230	-0.0737
34	-0.4252	-0.1847	-0.1489	-0.1156	-0.0544	-0.4129	0.1791	-0.1239	0.1293
100	0.4075	0.0757	-0.0075	-0.0401	0.0323	0.0456	-0.0947	0.0441	-0.1091
-	-0.4035	-0.1637	-0.0448	-0.2412	-0.1557	-0.2694	0.1434	-0.2853	0.0341
-	-0.3974	0.2443	-0.1131	-0.1907	-0.2266	-0.1250	-0.0853	-0.1403	0.1215
-	0.3943	0.1107	0.0597	0.1282	0.0302	0.1511	-0.0162	-0.0129	-0.0201
94	-0.3841	0.1357	-0.1032	-0.2012	-0.2075	-0.3568	0.1301	-0.1922	0.0239
-	0.3751	-0.0488	0.2568	0.1043	0.0658	0.0723	-0.1662	-0.0703	-0.0152
-	-0.3714	0.1454	-0.1013	-0.1594	-0.0979	-0.3167	0.1390	-0.1538	0.1855
-	0.3684	0.3478	0.0354	-0.0147	-0.0566	-0.0760	0.0140	-0.1032	0.0761
20	-0.3535	0.0190	0.0572	-0.0362	0.0863	0.0263	-0.3136	-0.0587	-0.0570
-	-0.3267	0.0589	-0.0200	-0.0317	-0.1981	-0.2337	0.0584	-0.0170	-0.0007
-	-0.2869	0.1807	-0.0920	-0.1917	-0.2843	-0.2180	0.1525	0.1459	0.2261
-	-0.2738	0.2020	-0.2604	-0.1008	-0.1183	-0.0458	0.1335	-0.0611	0.2640
-	-0.2714	0.1843	-0.1401	-0.0884	0.0299	-0.2433	0.2242	0.0416	0.0879
-	0.1835	0.1338	0.0880	0.1146	0.0735	0.0641	-0.1347	-0.0311	0.1327
98	0.1136	0.6915	0.0165	-0.0719	0.0094	-0.0721	0.0304	0.0100	-0.0379
71	-0.0635	0.6508	-0.0168	-0.1339	0.1107	0.1541	0.0870	0.0677	0.1100
3	-0.2010	0.6450	-0.0360	-0.1055	0.0849	0.0414	-0.0172	0.1084	0.1472
82	-0.0128	0.6170	0.0212	0.0061	-0.0893	-0.0646	-0.0128	-0.0633	0.0101
35	0.0705	0.5959	0.0730	-0.0604	-0.0285	-0.0357	0.0603	0.0230	-0.0885
7	0.1127	0.5877	0.0028	-0.0859	-0.0129	0.0603	-0.1114	-0.0592	0.0227
105	-0.0697	0.5505	-0.1679	-0.1525	-0.1252	-0.0020	0.0774	-0.0106	0.1934
53	0.0969	0.5283	0.0014	-0.1866	-0.0904	0.1118	0.0306	0.0306	0.0917
13	-0.0814	0.5201	0.0884	0.0957	-0.0261	-0.1348	-0.0729	-0.0885	-0.0935
92	-0.1013	0.4916	-0.1319	-0.0723	-0.0069	-0.0380	0.1864	-0.0806	0.2560
-	-0.2590	0.4798	0.1119	-0.1460	0.1705	-0.0272	0.0583	0.1629	0.1182

FACTOR ANALYSIS OF 145 BLINDNESS ITEMS AND 4 DEMOGRAPHIC VARIABLES. 9 FACTOR ROTATION (VARIMAX). N = 477 (Cont.)

DFS Item Nos.	1 (3B)	2 (4B)	3 (7B)	4 (6B)	5 (5B)	6 (1B)	7 (2B)	8	9
85	-0.0449	0.4704	-0.0897	-0.3159	-0.0119	-0.0819	0.1075	0.0335	0.1490
21	-0.0485	0.4608	0.0750	-0.0604	-0.0589	-0.0989	-0.0159	0.0556	0.0525
57	-0.0573	0.4590	0.1609	0.0364	0.0889	-0.0476	-0.1283	-0.0711	-0.0343
48	-0.1530	0.4501	-0.0074	-0.0883	-0.1752	-0.0983	0.0664	-0.0257	0.2124
30	-0.1566	0.4358	0.0722	0.0431	-0.0115	-0.0752	-0.0697	-0.1383	0.0371
63	0.3243	0.4285	-0.0427	0.0508	-0.0433	-0.0449	0.0158	-0.0138	-0.0598
43	0.0257	0.4265	-0.1228	-0.0845	-0.0506	0.0690	0.0090	-0.0867	0.1112
-	-0.0045	0.3737	-0.3177	0.0309	-0.1449	-0.0537	0.0948	-0.2160	0.1828
-	0.2910	0.3578	0.2577	-0.0677	0.2016	0.0497	-0.1552	0.0580	-0.0905
-	-0.0677	0.3469	0.0124	-0.1472	0.0659	-0.0724	0.0871	0.0220	0.1772
22	-0.0104	0.3464	0.1928	0.0341	0.3363	-0.0578	-0.0464	0.0166	-0.0684
-	-0.2669	0.3333	-0.1182	-0.0811	-0.1563	-0.1428	-0.0034	0.0487	0.3250
-	0.0285	0.3149	-0.0565	-0.0955	-0.1416	-0.1510	0.0648	0.0325	0.2094
-	-0.2904	0.3037	-0.1336	-0.0862	-0.1804	-0.1932	0.2116	-0.0629	0.2564
-	-0.1958	0.2996	-0.0051	-0.2223	-0.1320	-0.1529	0.0215	0.1268	0.0589
-	0.0270	0.2844	-0.0126	-0.0938	-0.0514	-0.2272	-0.0247	-0.1141	0.0732
59	-0.0844	0.2715	-0.0903	-0.0934	-0.2307	-0.2318	0.0785	-0.1762	0.1082
-	-0.2381	0.2443	-0.1382	-0.0892	-0.1579	-0.1760	0.0935	-0.2440	0.1137
67	-0.2376	0.0730	-0.5889	0.0170	-0.0126	-0.0725	-0.0556	-0.0434	0.0347
56	-0.3118	0.0898	-0.5864	-0.0888	-0.0201	-0.0537	-0.0150	0.0424	0.0885
32	0.0787	0.1335	0.5509	0.0974	0.0556	0.1561	-0.4133	0.1161	-0.0358
27	-0.1041	-0.0033	-0.5183	-0.0356	-0.0545	-0.0926	0.1524	-0.0920	0.0787
8	0.0630	-0.0314	-0.4661	0.0326	-0.0701	-0.0956	-0.0336	0.0526	0.1296
74	-0.1810	0.0505	-0.4536	0.0185	-0.0282	-0.1032	0.4496	-0.3042	-0.0167
54	-0.2929	0.0782	-0.4406	-0.0158	-0.0231	-0.0237	0.3488	-0.3249	-0.0382
15	0.2094	0.2031	0.4295	-0.0836	0.2907	0.1087	-0.0636	-0.1013	-0.0910
81	0.3077	0.3019	0.4292	-0.0904	0.2366	0.0116	-0.1968	0.0793	-0.1315
44	0.1932	0.0450	0.4191	0.1341	0.0951	0.1062	-0.0578	-0.0667	-0.0469
104	-0.0199	0.0063	-0.4123	0.0507	-0.0205	-0.1032	0.1273	-0.1642	0.1890
39	0.2709	0.2586	0.4042	-0.0384	0.1947	0.0069	-0.1397	-0.0161	-0.1944
49	-0.1396	0.1189	-0.3280	-0.0240	-0.1723	-0.1350	0.0174	-0.0960	0.1865
-	0.0029	-0.1722	-0.3238	0.1030	-0.2926	-0.0221	0.0810	-0.1305	0.2772
-	-0.0051	0.1477	-0.2908	-0.1306	-0.1714	-0.1135	0.1018	0.0021	0.2793
97	-0.0636	0.2728	-0.0225	-0.7040	-0.0800	-0.0908	0.1054	-0.1315	0.0314
40	-0.1477	0.2197	0.0013	-0.6864	-0.0297	-0.1584	0.1121	-0.1135	0.1343
24	0.0019	0.1625	0.0401	-0.6599	0.0311	-0.0574	0.0626	-0.0825	0.0088
58	0.1052	0.3091	0.0635	-0.4482	-0.0909	-0.0017	-0.0660	0.0096	-0.0424
77	-0.0208	0.0975	0.0949	-0.3885	-0.0754	-0.2838	-0.0424	0.0749	0.0907
45	-0.0714	0.3573	-0.0742	-0.3839	-0.0287	-0.3424	0.1781	0.0140	0.2430
12	-0.2181	-0.0337	-0.0495	-0.3663	-0.0902	-0.1385	0.0434	-0.3552	0.1057
61	-0.0862	0.1790	-0.1991	-0.3589	-0.2255	-0.1201	0.2222	-0.1343	0.1248
28	-0.0344	0.1035	-0.1142	-0.3393	-0.1343	-0.2308	0.0645	0.0278	-0.0238
76	-0.2657	0.0682	-0.1492	-0.1623	-0.5360	-0.0530	0.1398	-0.0260	0.1870
6	-0.1071	0.0098	-0.0940	-0.1006	-0.5209	-0.1010	-0.0204	-0.0545	0.1502
70	-0.3992	0.0284	-0.0070	-0.0604	-0.5101	-0.1130	0.0478	-0.1604	0.1432
26	-0.2134	-0.0448	-0.0673	0.0156	-0.4232	-0.1351	-0.0595	-0.0638	-0.0166
95	-0.4056	0.0012	-0.0288	-0.0125	-0.4121	-0.0975	0.2017	-0.0124	0.0594
79	-0.2940	-0.1076	-0.2628	-0.0913	-0.3760	-0.2039	0.1348	-0.1497	0.2753
83	-0.1240	0.1178	-0.1119	-0.1394	-0.3723	-0.3114	0.0801	-0.2051	0.0470
89	-0.1809	0.1355	-0.0727	-0.1654	-0.3506	-0.1844	0.2345	-0.0174	0.0766

FACTOR ANALYSIS OF 145 BLINDNESS ITEMS AND 4 DEMOGRAPHIC VARIABLES. 9 FACTOR ROTATION (VARIMAX). N = 477 (Cont.)

DFS Item Nos.	1 (3B)	2 (4B)	3 (7B)	4 (6B)	5 (5B)	6 (1B)	7 (2B)	8	9
52	-0.2309	0.2338	-0.1661	-0.0218	-0.3448	-0.1921	-0.0061	-0.1097	0.2178
16	-0.2348	0.1285	-0.0542	-0.1166	-0.3304	-0.1213	-0.1260	0.0676	0.2131
36	-0.0241	0.2418	-0.1238	-0.1778	-0.3142	-0.2116	0.0231	-0.0946	0.1302
-	0.0836	0.0455	0.0714	0.0041	0.1118	0.0659	-0.0909	-0.0643	0.0672
11	-0.3637	-0.0974	-0.1568	-0.0628	-0.0063	-0.6159	0.0765	-0.0441	0.0121
66	-0.2085	0.0631	-0.1914	-0.2886	-0.0954	-0.5388	0.1968	0.0112	0.0977
75	-0.2002	0.0307	-0.1726	-0.3240	-0.1189	-0.5087	0.0919	-0.1355	0.1069
50	-0.4581	-0.0472	-0.1523	-0.0662	-0.0303	-0.4772	0.1780	-0.0522	0.0568
62	-0.1444	0.1322	-0.1855	-0.1503	-0.1656	-0.4668	0.1495	0.0272	0.0608
88	-0.0705	0.0999	-0.0074	-0.0852	-0.3478	-0.4370	0.0028	-0.0740	-0.0506
99	-0.3077	-0.0186	-0.2071	0.0293	-0.2735	-0.4229	0.2003	-0.1358	0.0796
41	-0.1596	-0.0407	-0.1149	0.1515	-0.2649	-0.3813	0.2162	-0.0382	-0.0163
1	-0.3307	0.0885	-0.0711	-0.2101	-0.0038	-0.3622	0.0712	-0.0992	0.2982
103	-0.2806	0.2038	-0.1523	-0.1744	-0.1403	-0.3613	0.0871	-0.0938	0.1617
-	-0.0674	0.1130	0.0078	-0.2972	-0.0409	-0.3456	0.0166	-0.0927	0.1812
69	-0.2278	0.1165	-0.1060	-0.3190	-0.0816	-0.3286	0.2651	-0.1328	0.1437
84	-0.2663	0.1287	-0.0103	-0.0643	-0.0628	-0.3286	-0.0174	-0.0662	0.1387
18	-0.2309	-0.0133	-0.0042	-0.0354	-0.1839	-0.3184	-0.1006	-0.0564	0.0217
-	-0.3108	0.1671	-0.1465	-0.1202	-0.0837	-0.3118	-0.0644	-0.0138	0.2049
-	-0.2004	0.1835	-0.1982	-0.1126	-0.2175	-0.3066	0.1956	-0.0649	0.2667
-	-0.2010	0.0858	-0.1950	0.0038	-0.1165	-0.2378	-0.0373	-0.0396	0.1125
101	0.0907	0.0593	0.1502	0.1936	0.1259	0.1190	-0.4971	0.0957	-0.0959
17	-0.1275	-0.0977	-0.4302	-0.0660	-0.0884	-0.1818	0.4621	-0.1995	0.0784
72	-0.3210	-0.0277	-0.2364	-0.1191	-0.1275	-0.0012	0.4368	-0.2946	0.1705
9	0.0747	-0.1223	-0.0186	0.0296	-0.0516	0.0599	-0.4318	-0.0723	-0.0798
86	0.1238	0.0654	0.2920	0.0796	0.2277	0.1907	-0.3976	0.0462	-0.1086
31	-0.3267	-0.0082	-0.0465	-0.1935	-0.0267	-0.0085	0.3771	-0.2600	0.1744
65	[illegible]	0.1201	-0.2014	0.0075	-0.1591	-0.0230	0.3191	-0.0874	0.1454
-	[illegible]	0.0454	-0.0790	-0.3090	-0.0822	-0.1225	0.1270	-0.3916	0.1195
-	[illegible]	0.0905	-0.0821	-0.1913	-0.2075	-0.2056	0.0975	-0.3604	0.0708
-	[illegible]	0.0518	-0.2217	-0.0540	-0.1745	-0.2278	0.1111	-0.3345	-0.0437
-	[illegible]	0.0696	-0.0761	-0.0837	-0.0688	-0.1919	-0.0981	-0.2835	0.1865
93	-0.1225	0.0909	-0.1244	-0.0969	-0.1492	0.0146	0.0817	0.0246	0.5199
90	-0.2905	0.1330	-0.1373	-0.0385	-0.1105	-0.0943	0.0963	-0.0647	0.4621
-	-0.0315	0.1795	-0.1143	-0.0793	-0.1362	-0.1049	0.0647	-0.1092	0.4320
-	-0.2997	0.2177	-0.2262	0.0667	-0.1957	-0.1380	0.0907	0.0000	0.4219
46	-0.1045	0.2601	-0.0754	-0.1051	-0.2588	-0.1430	-0.0026	-0.0226	0.3652
-	-0.0862	0.3101	-0.1001	-0.0178	-0.0100	-0.1195	0.0301	-0.0640	0.3614
-	-0.1775	0.1451	-0.1370	-0.0100	-0.1733	-0.2395	0.1831	-0.2044	0.3511
-	-0.3475	0.2705	-0.0681	-0.1482	-0.1438	-0.2244	0.0232	-0.0606	0.3499
-	-0.2405	0.2094	-0.1554	-0.1998	-0.0369	-0.2923	0.2260	0.0233	0.3133
102	-0.2381	0.1478	-0.1322	-0.1943	-0.2061	-0.1468	0.0554	-0.2754	0.3130
4	-0.1739	-0.1000	-0.2646	-0.0343	-0.0365	-0.0252	0.0850	-0.0815	0.2996
-	0.1131	0.0712	0.1194	-0.2612	0.0015	-0.2701	-0.0886	0.1303	-0.2982
-	-0.1069	0.1780	-0.1732	-0.0280	-0.2722	-0.0293	0.1815	0.0319	0.2943
-	-0.0538	0.2770	-0.0205	-0.1201	0.0420	0.0069	-0.0501	-0.0067	0.2804
-	0.1379	0.0230	0.2150	-0.0522	-0.1008	-0.0653	-0.2062	-0.1115	-0.2615
	12.2656	8.8646	5.5025	4.4057	4.6069	6.0361	3.9027	2.3821	4.6474
	23%	17%	11%	8%	9%	12%	7%	5%	9%

FACTOR ANALYSIS OF COSMETIC ITEMS. 6 FACTOR ROTATION (VARIMAX). N = 520

DFS Item Nos.	1 (2C)	2 (4C)	3 (3C)	4 (1C)	5 (5C)	6 (6C)
73	-0.6282	0.0027	0.1431	-0.1808	-0.0225	0.1045
5	-0.6273	-0.0254	0.1209	-0.0757	-0.1786	0.0644
66	-0.6230	-0.0156	-0.0306	-0.2727	-0.1023	0.2296
27	-0.6068	0.0101	0.0630	-0.1037	-0.1088	0.1380
37	-0.5749	-0.0637	0.2417	-0.0787	-0.1130	0.1402
49	-0.5492	-0.0321	0.1698	-0.2932	-0.0653	0.0891
25	-0.5293	-0.0851	0.2326	-0.0781	-0.3026	0.1059
10	-0.5204	-0.0566	-0.0327	-0.1782	-0.2753	0.0105
33	0.4968	-0.0716	-0.1578	0.0540	0.0587	-0.0335
61	-0.4876	0.0318	0.0020	-0.4325	-0.0019	-0.0090
-	0.4781	-0.0532	0.0690	-0.2548	-0.0663	-0.1912
53	-0.4545	-0.0129	0.2567	-0.1438	-0.2364	0.0568
43	-0.4250	-0.1949	-0.2746	-0.2230	-0.0960	0.0255
69	-0.4228	0.0315	0.0389	-0.2714	-0.2843	0.0999
29	-0.4091	-0.2347	-0.2967	-0.1895	-0.2049	0.0714
2	-0.4008	-0.0688	0.1053	[illegible]	-0.1500	0.1712
57	-0.3848	0.0911	0.2012	[illegible]	-0.1301	-0.1172
22	-0.3783	0.0988	0.3397	[illegible]	-0.2859	0.1088
21	-0.3447	-0.0200	0.2239	[illegible]	-0.1740	0.1487
80	-0.3314	-0.0264	0.3017	-0.2750	-0.2126	0.0802
67	-0.3235	-0.0699	0.0486	-0.2684	-0.1206	0.2893
17	-0.3213	0.1493	0.0450	-0.2653	-0.1540	0.2855
48	0.0578	-0.4728	-0.0234	-0.1728	-0.0133	0.2305
28	0.0115	-0.4176	0.2054	0.0713	-0.0061	0.0055
75	-0.2683	-0.3942	0.0436	-0.2742	-0.1349	0.1095
70	0.0805	-0.3743	0.0311	-0.0361	0.0152	0.1614
62	-0.0911	-0.3725	-0.2072	-0.2177	-0.1968	0.0436
42	-0.1178	-0.3701	0.1264	-0.1570	-0.1036	0.1143
16	0.1886	-0.3474	-0.0960	0.0722	-0.0279	0.0689
59	0.1921	-0.3182	-0.1330	0.1148	-0.1315	-0.1153
40	-0.0535	-0.2984	0.0857	0.0022	0.0916	-0.0011
23	0.0036	-0.2826	-0.0387	0.0863	-0.0032	0.0060
12	0.0476	-0.2678	-0.0829	-0.1297	0.0996	0.2372
1	-0.1594	-0.2478	0.1969	0.0399	-0.0296	0.0131
46	-0.2200	-0.1960	0.5122	-0.1753	-0.1905	-0.0082
-	0.0931	-0.2719	0.4571	-0.0378	0.1174	0.2665
30	-0.2285	-0.0447	0.4545	-0.1749	-0.3689	0.0089
39	-0.3188	-0.0973	0.4095	-0.1738	-0.2594	-0.0588
15	-0.0138	-0.0866	0.4025	-0.1383	-0.0421	0.0371
52	-0.0194	-0.3479	0.3638	0.0730	-0.0155	0.0416
11	-0.0352	-0.1652	0.3518	-0.1697	-0.2438	0.1811
41	-0.2776	0.0749	0.3277	-0.1965	-0.2426	0.3036
55	0.2332	-0.0784	-0.3260	0.0686	-0.0051	-0.0546
76	0.1231	-0.1646	-0.3110	-0.0035	0.1413	0.1080
4	-0.1742	-0.0002	0.3085	-0.0016	-0.0600	-0.2665
71	-0.1096	-0.1444	-0.2287	-0.0602	-0.2108	0.2036
14	-0.0995	-0.0669	0.0721	-0.6573	-0.1356	0.0509
3	-0.1986	0.0206	0.0259	-0.5736	-0.0816	0.0828
51	-0.1416	-0.1087	0.3118	-0.5523	-0.1467	0.0476
44	-0.2175	0.0743	0.1488	-0.5493	-0.2261	0.0869

STUDIES IN REACTIONS TO DISABILITY

I. Reactions to Physical Disability by the Disabled and Nondisabled.

II. Personality Determinants of Reactions to the Physically Handicapped.

III. Factorial Structure and Correlates of the Attitude Towards Disabled Persons Scale.

IV. Response Set Paralysis.

V. Reactions to Physical Disability.

VI. Ego Factors in Reactions to the Physically Disabled.

VII. Perceptions of Physically Disabled by the Nondisabled.

VIII. Personality Determinants of Reactions to the Physically Handicapped II.

IX. Conceptual and Methodological Issues in the Study of Attitudes Toward Disability.

X. Components of Attitudes Toward the Disabled.

XI. Attitudes of the Nondisabled Toward the Physically Disabled.

XII. Structure of Attitudes Toward the Physically Disabled: The Disability Factor Scales – Amputation, Blindness, Cosmetic Conditions.

Copies of these studies are available without charge from the following address:

Jerome Siller, Ph.D.
Press Annex Bldg., Room 71
26 Washington Place
New York University
New York, New York 10003

FACTOR ANALYSIS OF COSMETIC ITEMS. 6 FACTOR ROTATION (VARIMAX). N = 520 (Cont.)

DFS Item Nos.	1 (2C)	2 (4C)	3 (3C)	4 (1C)	5 (5C)	6 (6C)
74	-0.3352	-0.2126	0.0226	-0.4593	-0.1892	0.1851
18	-0.1553	-0.0724	0.2309	-0.4583	-0.0449	0.1809
68	-0.2113	-0.2539	0.0843	-0.3993	-0.1475	0.1131
56	0.0276	-0.0686	0.0125	0.3827	0.0452	-0.1387
78	-0.0992	-0.1472	-0.1035	-0.3822	-0.0979	0.2226
34	-0.3298	0.0402	0.1495	-0.3765	-0.1341	0.0540
79	-0.2858	0.0449	0.2139	-0.3543	-0.2095	0.3455
9	-0.2314	0.1260	0.2400	-0.3521	-0.1796	0.2125
60	-0.2308	0.0590	-0.0075	-0.3398	-0.3282	0.1818
63	-0.1785	-0.2655	0.1004	-0.3230	-0.1889	0.2088
47	0.2473	-0.0348	-0.2005	0.3081	-0.0374	-0.0255
24	-0.2881	-0.0845	0.0453	-0.2901	-0.1435	0.1880
38	0.2380	-0.1848	0.0666	0.2857	0.1372	-0.1233
6	-0.0980	-0.2642	0.1711	-0.2688	0.0424	0.2139
-	0.1049	-0.0726	-0.0742	-0.2370	-0.2237	0.0658
54	-0.1948	0.0383	0.0164	-0.1407	-0.6028	0.0005
65	-0.2220	0.0416	0.0853	0.0207	-0.5457	0.2640
72	-0.0139	-0.1502	0.1063	-0.1706	-0.5309	0.0478
50	-0.1882	0.1517	0.1285	0.0400	-0.4626	0.2813
26	-0.2023	0.0269	0.2161	-0.1469	-0.3984	0.1632
32	-0.2125	-0.0504	0.0745	-0.3710	-0.3726	0.0504
19	-0.3525	0.0133	-0.0470	-0.3441	-0.3659	-0.0712
35	-0.3257	0.1270	-0.1504	-0.2238	-0.3374	0.0121
8	-0.1464	0.0588	0.1738	-0.2728	-0.3146	0.1251
77	-0.1098	-0.0856	0.0907	-0.1838	-0.3130	0.0856
-	-0.0600	-0.1982	0.1277	-0.1918	-0.2370	0.1538
-	-0.1469	-0.1538	0.1232	-0.0785	-0.2368	0.0616
64	-0.0528	-0.1331	-0.0628	-0.1462	-0.0287	0.5735
31	-0.1351	0.0179	-0.0407	-0.2335	-0.0574	0.4826
20	-0.0934	-0.0990	0.1405	-0.0667	-0.1088	0.4782
36	-0.2782	-0.0249	-0.0239	-0.1241	-0.2691	0.4762
58	-0.0877	-0.2139	0.0486	-0.0807	-0.0865	0.4583
13	-0.0664	-0.0481	-0.0717	-0.0540	-0.1153	0.4524
45	-0.0592	-0.1222	0.1983	-0.0012	0.0041	0.3156
7	-0.1629	-0.0819	0.1405	-0.0893	-0.1189	0.2925
-	-0.0907	-0.1783	-0.0146	-0.1494	-0.2083	0.2539
	7.1858	2.6499	3.3521	5.4604	3.8942	3.3724
	28%	10%	13%	21%	15%	13%